Phase I Summary

Phase I testing consisted of a pedestrian survey which located six loci of material culture. These small scatters contained quartz flakes and fire-cracked rocks. Because of the presence of these materials in a desirable physical setting and in order to discern whether and how these sites may be interrelated, it was determined that Phase II testing was warranted (Bachman et al. 1988).

Phase II Results

Phase II testing at 7K-C-366 consisted of 25 1m x 1m test units. The core of the site was determined to be largely confined to the eastern and southern edges of the site along the E50 and S150-S175 lines. The limits of the site and the location of all Phase II tests are shown in Figure 98. Figure 99 shows a representative profile of the site taken from the west wall of Test Unit S75E50.

No prehistoric subsurface features or diagnostic cultural materials were located by the Phase II testing. The overwhelming majority of artifacts consists of flakes, only two of which exhibited cortex. The remaining artifacts include two flake tools, both with cortex, one quartz shatter, three fire-cracked rocks and one non-diagnostic chalcedony biface tip. A total of 36 artifacts were recovered at the site, 89 percent of which were located in the plow zone. The concentration of flakes at the site and the absence of specialized tools, ceramics, and pit or hearth features, combined with the site's location next to a minor drainage, indicates that the site most likely functioned as a procurement locus. At such a site, tool refurbishing would likely have taken place, and a scattering of non-cortex debitage could be expected to dominate the artifact assemblage. Tip fractures, such as the one indicated by the broken biface, commonly resulted from impact produced by hunting activities, and would also be expected among the artifact assemblage.

Conclusions and Recommendations

Since no cultural features or diagnostic cultural materials were located by Phase II testing, it is not possible to place the site in temporal sequence or to provide other criteria that would enable further testing of the research design. Therefore, 7K-C-366 is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

7K-C-365A/B

7K-C-365A and 7K-C-365B are located north of Dover, east of Dover Downs Racetrack, and west of the Dover-Leipsic Road (Figure 2). One of the sites, 7K-C-365A, is a prehistoric site located within the proposed right-of-way (Plate 13). 7K-C-365A measures about 18m x 36m (60' x 120') and is situated atop a knoll alongside Muddy Branch, an easterly flowing tributary of Green Creek and Simon's River, which empty into Delaware Bay approximately 16 km (10 miles) downstream from the site. The knoll measures approximately 50 m x 100 m (164' x 328') and rises from 6.3 m (21.0') to a maximum height of 8.8 m (29.1') above sea level over a distance of 60 m (200'). This degree of elevation change is quite pronounced and is rarely found in central Kent County, Delaware. The long axis of the rise is oriented roughly northeast-southwest and Muddy Branch meanders to within 30 m (100') of the base of the knoll. Muddy Branch is only about 1.5-2.0 m (4-6') wide at this point and originates in swamps no more than 2 km (1.24 miles) north of the site. The stream surface lies at an elevation of 5.8 m (19') above sea level, so the difference between the stream and knoll crest is 3 m (10').

The USDA soil survey of Kent County (Matthews and Ireland 1971, Sheet 13) shows the site as lying in a large expanse of Othello series silt loam, which is characterized as a poorly drained soil on uplands. Native vegetation consists of gum, holly, swamp maple, many species of oak, and other wetland hardwoods (Matthews and Ireland 1971:17). Most of the wet woods surrounding the site, which form the headwaters of Muddy Branch, are underlain by this soil type. The soil survey, however, was not discriminating to the point where it could discern small rises like that at 7K-C-365A, which appears to have soils similar to the Sassafras series found in nearby agricultural fields. Sassafras soils are well-drained sandy and sandy clay loams on uplands which support mixed deciduous forests (Matthews and Ireland 1971:23).

PLATE 13

Site 7K-C-365A, Aerial View of Hill A, Dover Downs

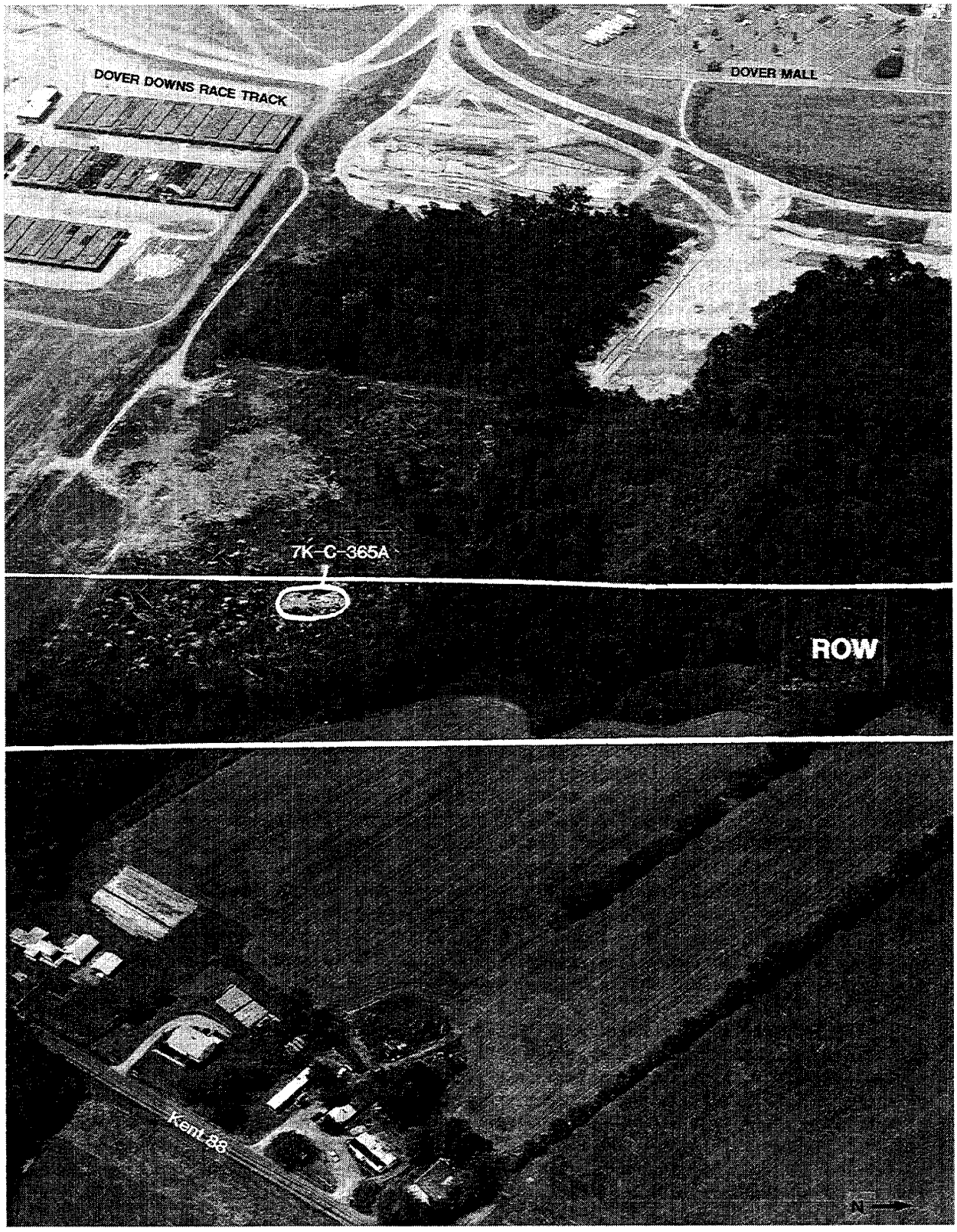
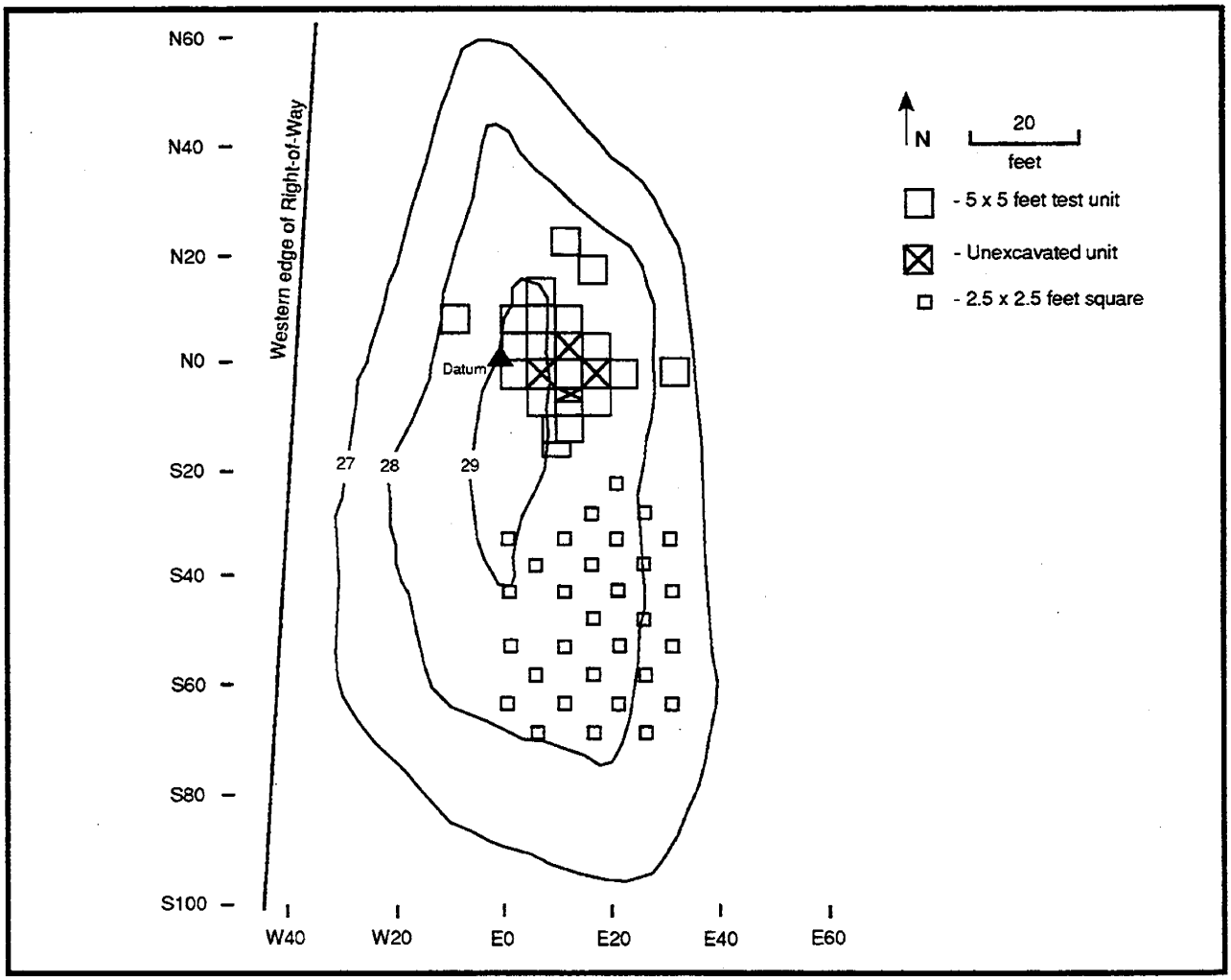


FIGURE 100

Dover Downs Site (7K-C-365A) - Location of all Phase II Tests



During the times of the prehistoric occupations of the site, it was probably always an "oasis" of well drained habitable land surrounded by uninhabitable poorly drained freshwater wetlands. Little is known of the environmental history of such interior wetlands, but it is likely that wetter-adapted oaks, maple, and gum characterized the tree cover over the past 12,000 years. Given the relatively constant poor drainage conditions in the poorly drained woodlands, it is likely that the site's well-drained knoll always represented a convenient habitation locale from which the rich resources of the poorly drained woodlands could be exploited.

At the time of the initial investigation of the site in October 1987, it had recently been partially cleared of vegetation by Dover Downs Racetrack personnel as part of a series of improvements designed to increase space for overflow vehicle parking. The soils had suffered some disturbance from bulldozer tracks and stump removal but the overall impact to the site was minimal and the disturbed areas could be easily identified and isolated. The limits of the site and the locations of all Phase II tests and features are shown in Figure 100.

The second site, 7K-C-365B, is a historic site located outside of the proposed right-of-way. This historic site also contained a prehistoric chipping feature which was determined by archaeological testing to have been

disturbed by the historic component. The historic component, 7K-C-365B, the Loockerman's Range site, is National Register eligible and is threatened by the proposed construction of a parking lot by Dover Downs Raceway. Salvage excavations completed there during the fall of 1987 are described in more detail in Grettler et al. (1991a).

Background Research

Prior to the 1987 Relief Route Corridor survey by UDCAR, there were no recorded prehistoric sites in the immediate vicinity of the hill at 7K-C-365A. Numerous multicomponent sites had been surface collected by Dover residents Andrew Leitzinger and Christopher Chapman on both sides of Muddy Branch about 2-5 km (1.5-3 miles) downstream (Figure 101) from the Dover Downs site and over 7,000 artifacts were collected from 21 sites in the Muddy Branch drainage. A catalog listing the sites and artifacts in the Leitzinger/Chapman collection, is included noted in Custer et al. (1986: Appendix II). The artifacts collected from these sites are representative of various cultural complexes from the Late Paleo-Indian Period (Kirk and Palmer corner-notched points) through the Archaic, Woodland I, and Woodland II Periods. Macro-band base camps are prominent among these sites and micro-band base camps and procurement sites are also present. Non-local lithic materials, such as argillite and rhyolite, are a significant minority present in the collection, indicating either direct long range procurement or participation in exchange networks. The locations of the sites represented in the Leitzinger/Chapman collection are similar to the Dover Downs site in terms of the topographic settings and distance from water, although 7K-C-365A is located on a much more pronounced rise.

Phase I Summary

The 1987 Phase I testing of the Dover Downs site (7K-C-365A) included a pedestrian survey of the partially exposed crest of the knoll and the excavation of three 3' x 3' test units selectively placed on the crest (Figure 102). The pedestrian survey found that patches of subsoil had been exposed beneath the thin topsoil and some cryptocrystalline flakes and fire-cracked rocks were observed. These artifacts did not appear to be from features but did indicate the presence of a site. The three test units, (labeled 13A, B, and C) all produced artifacts in undisturbed subsoil contexts to depths of up to 1.3' (40 cm) below surface. The initial soil horizon was a 0.2' (6 cm) thick medium brown sandy loam which represented the modern root mat and organic zone. Underlying this horizon was 0.6-1.0' (15-30 cm) thick horizon of yellow-brown silty sand. Beneath that layer were various layers of coarse red-brown sands containing iron oxide staining which are thought to be at least several thousand years old, and perhaps considerably older. Only the first two soil strata contained artifacts. Below 2.4' (70 cm), pale yellow sands with no pebbles and only fine gravels were encountered. These Columbia Formation sands contained more lines of iron oxide staining and extended to a depth of at least 1.3 m (4.2') below surface.

Test Unit 13-A produced an ovate biface from 1.05' (32 cm) below the surface, along with carbonized nut hulls and wood charcoal, several dozen quartz and cryptocrystalline flakes, fire-cracked rocks, and Wolfe Neck ceramics which date to 500-0 B.C. (Griffith and Artusy 1977:12). The ceramics were found 5 cm below the surface, indicating that the occupation levels were condensed into the very upper parts of the stratigraphy. Although the site had never been plowed, and thus was never subjected to the degree of erosion typical of archaeological sites in plowed fields, the shallow location of 2000-year old artifacts suggested that little soil accretion had taken place over a long period of time.

Test Unit 13-B was situated on the crest four meters south of 13-A and produced 60 flakes and fire-cracked rocks, plus carbonized wood and nut fragments. No diagnostic artifacts were found and the stratigraphic sequence was similar to Unit 13-A, although the Columbia Formation sands were not found until a depth of 4.0' (1.2 m). Test Unit 13-C was located 72' (22 m) south of 13-A on the southern end of the crest. Only 16 flakes were found to a depth of 1.3' (40 cm) and the occupation appeared to be much less intense at the southern end of the crest. No test units were placed on the steep slopes of the rise, because it was felt that the stratigraphic context of artifacts recovered from these areas would have been disturbed by erosion and slope wash.

In sum, the Phase I archaeological investigations at 7K-C-365A established the presence of prehistoric artifacts in undisturbed contexts to a depth of 1.3' (40 cm) below surface. Woodland I Wolfe Neck ceramics dating to 500-0 B.C. were the only diagnostic artifacts recovered. Also found was a teardrop jasper biface, flakes, fire-

FIGURE 101

Dover Downs Site (7K-C-365A) - Previously Recorded Prehistoric Sites in the Vicinity of Dover Downs

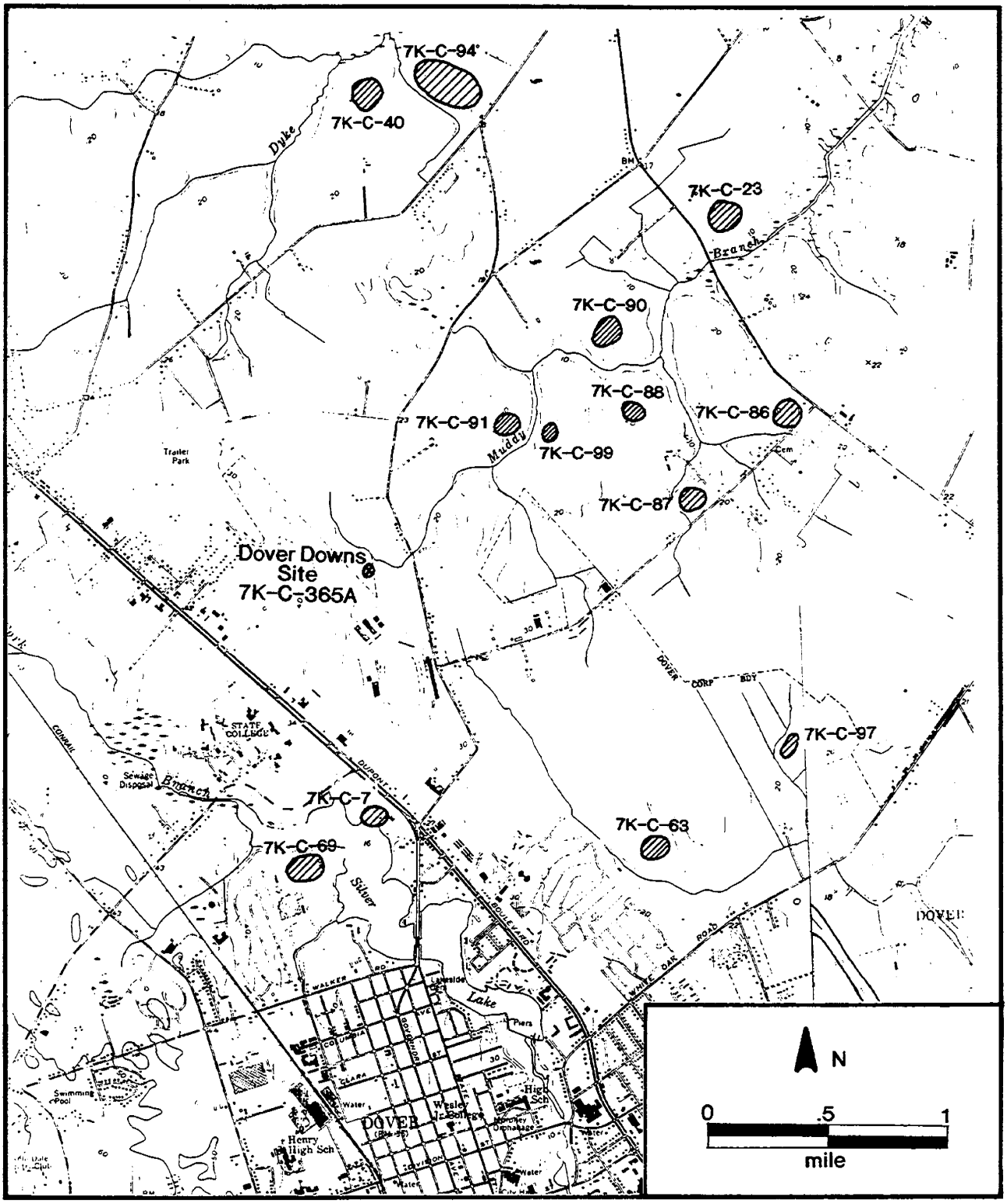
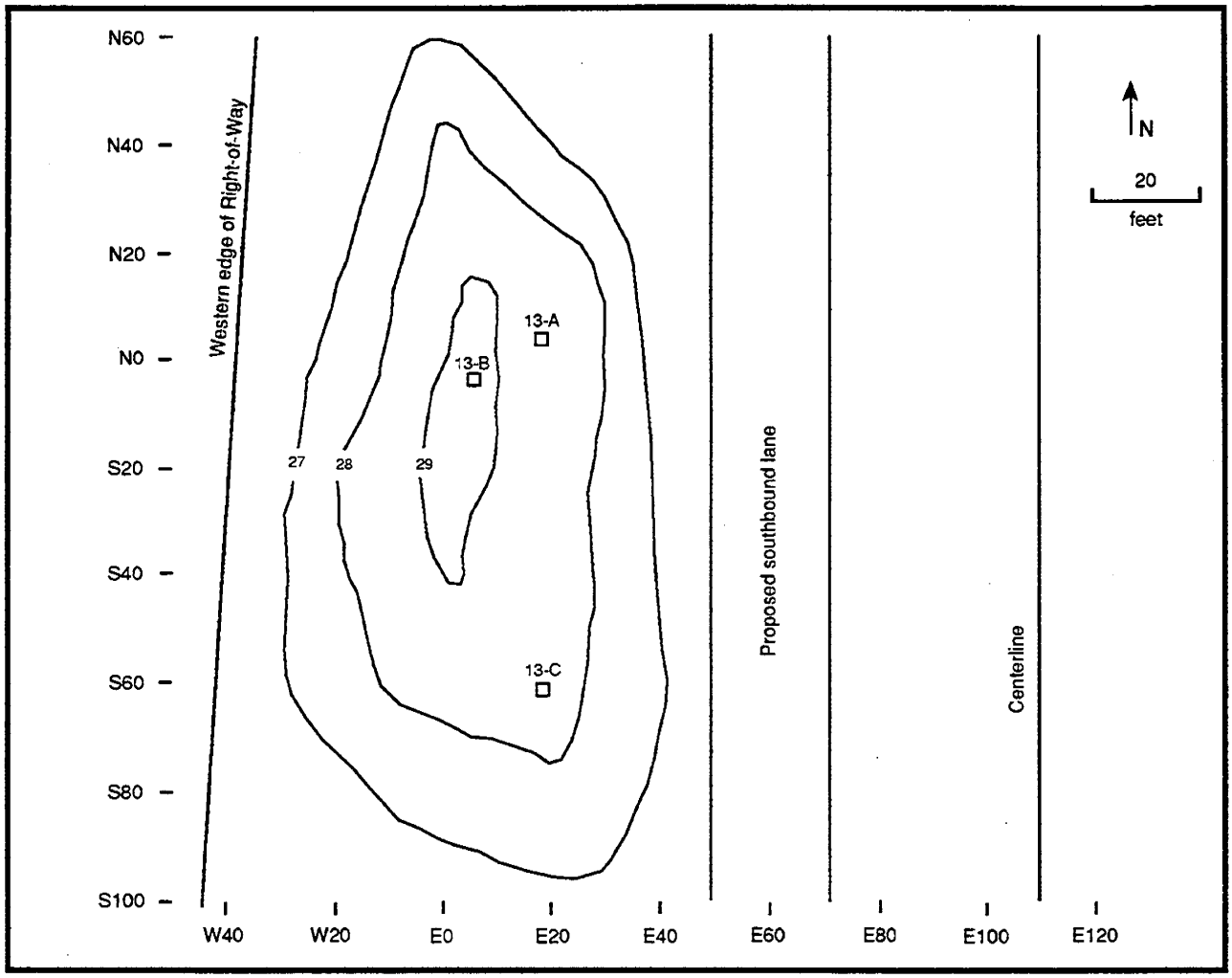


FIGURE 102

Dover Downs Site (7K-C-365A) - Phase I Test Units



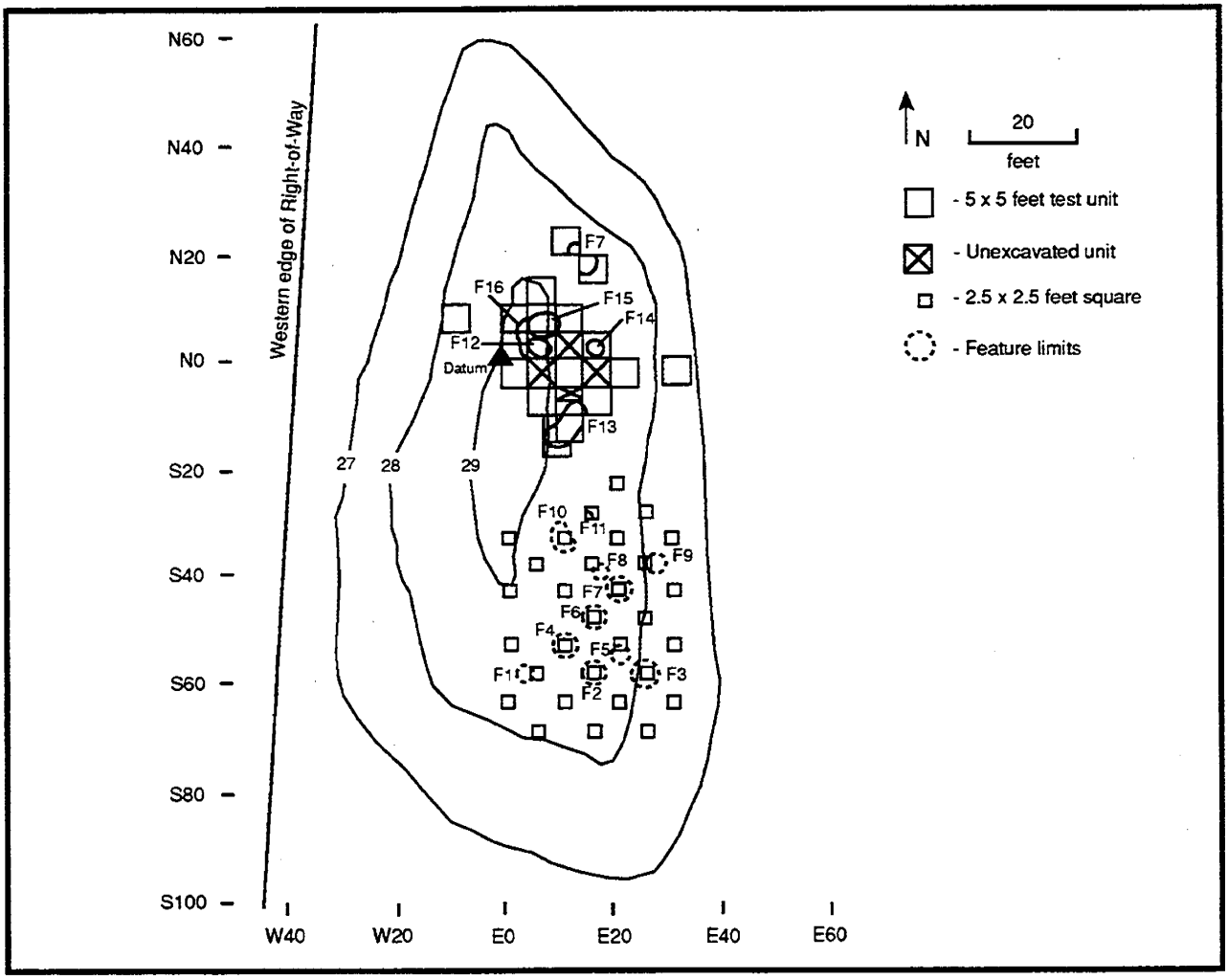
cracked rocks, and carbonized wood and nut hull fragments. The northern section of the knoll crest appeared to be more intensely occupied than the southern end. The site is presumed to occupy the 50' x 200' (15m by 60m) plateau at the crest of the rise as the slopes are too steep to have served as an occupation area.

7K-C-365B is situated on another rise approximately 250 feet southwest of 7K-C-365A (Figure 2). Although the low ground surrounding this site has been filled in recent times, the knoll itself is relatively undisturbed. Phase I testing consisted of a pedestrian survey which produced flakes and fire-cracked rocks as well as several historic ceramics. A 3' x 3' test unit placed on the west side of the crest produced flakes, fire-cracked rocks and additional historic materials. Another 3' x 3' test unit placed on the east side of the crest, however, located a prehistoric chipping area containing upwards of 300 high-grade quartzite flakes, a biface distal fragment, and fire-cracked rocks.

For the reasons cited above and because of the generally favorable setting of the sites near the confluence of Muddy Branch and the Leipsic River, and in order to ascertain whether and how 7K-C-365A and 7K-C-365B may be related, it was determined that Phase II testing was warranted (Bachman et al. 1988). The results of Phase II testing of the prehistoric components of 7K-C-365A and 7K-C-365B are presented separately.

FIGURE 103

Dover Downs Site (7K-C-365A) - Soil Pit Features Located During Phase II Excavations

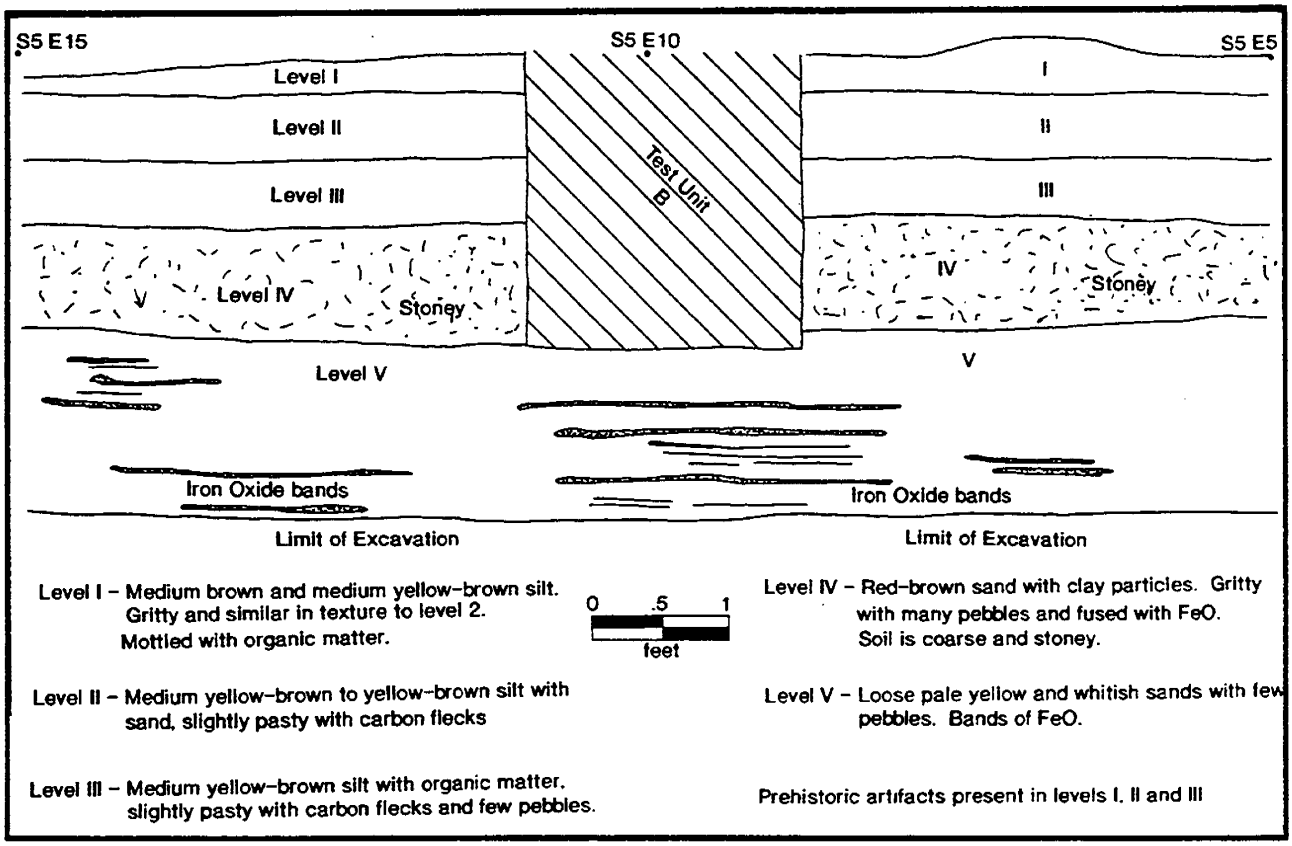


Phase II Results (7K-C-365A)

Excavation Strategy

The Phase II testing focused on the following goals: 1) assess the site's eligibility to the National Register of Historic Places; 2) determine the limits of the site; 3) sample the crest of the rise to determine the artifact density and cultures represented; 4) gather more information about the hill's stratigraphy; and 5) sample any features present. A grid of 5.0' x 5.0' test squares was set up across the crest of the rise (Figure 103) and approximately 50 percent of the units located at the northern end of the site were excavated. For the southern half of the site, 2.5' x 2.5' test units were used because the artifact density decreased in that direction. Several prehistoric pit features were discovered during the Phase II excavation and a sample of these were fully excavated to provide further information on the artifacts present at the site, and to assess the preservation of organic materials at the site.

FIGURE 104
Dover Downs Site (7K-C-365A) - Representative Stratigraphic Profile from the South Wall of Test Units S5E10 and S5E15



Site Stratigraphy

Figure 104 shows a typical stratigraphic sequence at the site. This sequence was taken from the west wall of Test Unit S5E10 in the northern end of the site and was excavated to 5.5' below surface. The initial three soil horizons (arbitrary excavation levels 1-4) can be considered as one group. These soils consist of a series of yellow-brown silty sands which were probably deposited by aeolian processes. The "A" Horizon contained a high organic content, as would be expected from a surface soil, and all three horizons contained charcoal flecks and prehistoric artifacts, with the artifacts found to a depth of 1.05' below surface. These initial three soil horizons are presumed to be Holocene age soils whose depositional time span is not known.

There is a major disconformity between stratum three and the next stratum down, which consists of coarse, gravelly reddish sands with pebbles, many of which are fused with iron oxide (Level 4). The disconformity may represent a considerable time gap in the depositional sequence. Certainly the two soil types exhibit characteristics of demonstrably different environments and energy levels. Stratum four was devoid of cultural material and no charcoal flecks were found. Beneath stratum four lay medium-to-fine, loosely compacted, pale yellow and whitish sands which contained little or no pebbles. Iron oxide staining has formed narrow horizontal bands or lamellae which are brittle and crusty. These soils may be of the Pleistocene-Age Columbia Formation (Jordan 1964) and were excavated to a depth of 3.5 feet below surface in Test Unit S5E10 (limits of excavation). At the bottom of Feature 12, a large soil pit feature which contained a stemmed chert biface, the yellow and white sands were noted at a depth of 4.1 feet below surface. Most likely these deeper soils are too old to contain artifacts, apart from those in intrusive features.

TABLE 21

7K-C-365A - HILL A
PREHISTORIC ARTIFACT SUMMARY

	Qtze	Qzt	Chert	Jas	Rhy	Arg	Chal	Other	Total
Flakes	183(23)	251(37)	291(56)	659(210)	45	11	33(1)	3	1476(327)
Utilized Flakes	2(2)	3(1)	10(5)	36(16)	0	0	6(1)	0	57(25)
Flake Tools	1	0	3(3)	5(4)	0	0	0	0	9(7)
Paleo-Indian Points	0	0	0	0	1	0	0	0	1
Archaic Points	0	0	0	2	0	0	0	0	2
Woodland I Points	2	1	2	5(2)	0	3	1	0	14(2)
ESBR	1	0	0	0	0	0	0	0	1
LSBR	0	1	0	1	0	0	0	0	2
Other Bifaces	1	6(2)	2	11(1)	0	0	0	0	20(3)
Misc. Stone Tools	1(1)	2	0	0	0	0	1	0	4(1)
Shatter	1	6	1(1)	3(2)	0	0	0	0	11(3)
Cores	3(2)	11(6)	6(6)	10(10)	0	0	0	0	30(24)
Total	195(28)	281(46)	315(71)	732(245)	46	14	41(2)	3	1627(392)

Groundstone Tools	
double-sided mortar	1
undiagnostic	1
Fire Cracked Rock	67
Unidentifiable Ceramics	18
Total Site Artifact Count	1748

Prehistoric Ceramics	
Wolfe Neck	4
Minguannan	28
Killens Ware	1

TABLE 22

DEBITAGE TOTALS
COUNTS AND PERCENTAGES
DOVER DOWNS SITE, HILL A (7K-C-365A)

Qzte	Qtz	Chert	Jas	Rhy	Arg	Irst	Chal	Other
183	251	291	659	45	11	0	33	3
(12.4)	(17.0)	(19.7)	(44.7)	(3.1)	(0.7)	(0)	(2.2)	(0.2)

Key:

Qzte - Quartzite
Qtz - Quartz
Jas - Jasper
Rhy - Rhyolite
Arg - Argillite
Irst - Ironstone
Chal - Chalcedony
( ) - Percentage

Excavation Results

Phase II testing consisted of 17 5' x 5' test units. Most of the units were in a contiguous area marked by the presence of large pit features (Figure 103). Two 2.5' x 5' test units and thirty-two 2.5' x 2.5' squares were also excavated in the southern half of the site, bringing the total square feet excavated to approximately 550, or 11 percent of the approximately 5000 square feet comprising the crest of the rise. These units were excavated in a checkerboard fashion created by the excavation of the northeast quadrant of each unit. The units excavated at the northern end of the site were more selectively excavated so as to fully expose soil pit features prior to excavation. The locations of all Phase II test units and features are contained in Figure 100.

Excavated Artifacts from Test Units

A total of 1,748 prehistoric artifacts were recovered from the Phase II excavation at 7K-C-365A. The artifact assemblage is summarized in Table 21. All but 119 of these are lithic artifacts, and 90.2 percent of the stone artifacts are unmodified waste flakes. The next largest class of lithic artifacts is unretouched utilized flake (3.5% of the assemblages). Seventeen diagnostic bifaces spanning the Paleo-Indian through Woodland I periods were recovered. No diagnostic Woodland II points were found. Twenty other non-diagnostic bifaces were recovered from various contexts as were non-diagnostic retouched flake tools, scrapers, cobble cores, a double-sided mortar and a few fire-cracked rocks. Fifty-one prehistoric ceramic sherds were found and over half (28) were of the Minguannan type of the Woodland II Period. Four Wolfe Neck sherds, one Killens Ware sherd, and 18 unidentified sherds were also found. A discussion of notable single artifacts and artifact clusters found at the site is presented below and artifacts found in feature contexts are discussed in a special section of this report.

Table 22 shows that cryptocrystalline materials were preferred by the site's occupants and chert, jasper, and chalcedony make up two-thirds of the total debitage assemblage. Quartz and quartzite account for nearly all of the remaining flakes. Small amounts of rhyolite debitage (3.1%) and argillite (0.7%) are also present in the assemblage. There is relatively little change in the material percentages by level; however, there does appear to be a difference in flake size by material type. Table 23 shows the various size percentages for each material type and these counts show that the cryptocrystalline flakes are generally smaller than the other types. Nearly all of the flakes are less than 2 cm across, indicating that late stage rather than primary stage reduction was taking place at the site.

The presence of cortex on the flakes was also noted (Table 24); cortex is present on all material types except rhyolite and argillite, indicating that local cobble resources formed the main supply. The cryptocrystalline materials show cortex much more frequently than quartz and quartzite, suggesting that the cryptocrystalline cobble

TABLE 23

FLAKE DISTRIBUTION BY SIZE AND MATERIAL TYPE
RAW COUNTS AND PERCENTAGES
DOVER DOWNS SITE, HILL A (7K-C-365A)

Size	Qzte	Qzt	Chert	Jas	Rhy	Arg	Irst	Chal	Other	Total
I	15	26	53	124	5	0	0	8	0	213
	(8.5)	(12.6)	(20.8)	(20.8)	(16.1)			(26.7)		
II	85	118	165	380	22	0	0	18	1	789
	(48.7)	(57.3)	(65.0)	(63.7)	(71.0)			(60.0)	(25.0)	
III	46	37	27	84	4	5	0	3	0	206
	(26.3)	(18.0)	(10.6)	(14.1)	(12.9)	(55.6)		(10.0)		
IV	21	12	7	8	0	1	0	1	1	51
	(12.0)	(5.8)	(2.8)	(1.3)		(11.1)		(3.3)	(25.0)	
V	6	7	2	1	0	2	0	0	0	18
	(3.4)	(3.4)	(0.8)	(0.2)		(22.2)				
> V	2	6	0	0	0	1	0	0	2	11
	(1.1)	(2.9)				(1.1)			(50.0)	
Total	175	206	254	597	31	9	0	30	4	1306
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)		(100.0)	(100.0)	

Key:

Qzte - Quartzite Arg - Argillite Size I - < 1cm Size IV - 3-4cm

TABLE 24

PERCENT CORTEX BY MATERIAL TYPE
TOTAL FLAKES (PERCENT OF TOTAL WHICH POSSESS CORTEX)
DOVER DOWNS SITE, HILL A (7K-C-365A)

Qzte	Qtz	Chert	Jas	Rhy	Arg	Irst	Chal	Other
183(23)	251(37)	291(56)	659(210)	45(0)	11(0)	0	33(3)	3(0)
13%	15%	19%	32%	0%	0%	0%	9%	0%

Key:

Qzte	- Quartzite	Rhy	- Rhyolite	Chal	- Chalcedony
Qtz	- Quartz	Arg	- Argillite	( )	- Number with Cortex
Jas	- Jasper	Irst	- Ironstone		

cores were much smaller. An examination of the 30 cobble cores from the site reveals that the cryptocrystalline cores range between 2.7 cm and 4 cm in breadth while the quartz and quartzite cores are larger, ranging from 3 cm to 7.5 cm.

Of the 30 bifacial tools found at the site, 17 are diagnostic (Table 25) and the other 13 are rejected and discarded bifaces, broken distal fragments, two drill shafts, and other bifaces in early and intermediate stages of manufacture. The 17 diagnostic bifaces are classified by the following periods: one Paleo-Indian point (Kirk stemmed), two Archaic Period points (1 bifurcate, 1 Neville-like point), 14 Woodland I points, and no Woodland II points. The Kirk stemmed point (Plate 14-A) and the bifurcate (Plate 14-B) were found in Feature 13 and a stemmed biface (Plate 15) was found in Feature 12. These finds will be discussed in the section on the features. The 14 Woodland I points are shown in Plate 15.

The jasper Neville-like point (Table 25, Plate 14-C) was recovered from the southwest quadrant of Level 1 of Test Unit N0E15. The edges of this broken and asymmetrical point are very steep and show evidence of heavy resharpening. Little flaking appears on the base and humps and step fractures on the blade make it apparent that this biface has been frequently resharpened and is probably a discard. Morphologically, the biface also bears some resemblance to the Stanley point reported by Coe (1964:35-36) from the Doerschuk site in North Carolina. Coe placed these points after the Kirk point and prior to the Morrow Mountain I point in a temporal sequence which lead to the Savannah River broadpoint. The date for the Stanley points was estimated to be about 7000 B.P. (Coe 1964:54), or some time after the bifurcated base points. Three utilized flakes (unifaces), two very small ceramic fragments (unidentifiable), two cores, two fire-cracked rocks, one non-diagnostic jasper biface reject (Level 2), and 48 flakes were also recovered from this unit. The occurrence of the Neville/Stanley point type in Delaware is not clearly documented. However, two strikingly similar bifaces have been found at other sites in Delaware: at site 7NC-H-31 south of Townsend, Delaware (Custer and Bachman 1986b) and at site 7K-C-291 southwest of Cheswold, Delaware (Custer et al. 1986:48). Both of these points were also made of red jasper and it could be that this form is the contemporaneous expression of the type in Delaware.

The recovery of the 7,000-year old Neville-like point from Level one of Test Unit N0E15, which appeared to be undisturbed, calls into question the stratigraphic integrity of this portion of the site. This same unit contained other artifacts down to a depth of 1.75' below surface, including an argillite biface at 1.0' below surface (Plate 13-G). The Neville-like point was at or above the level of Woodland I points, Wolfe Neck ceramics, and Minguannan ceramics found elsewhere on the site. Thus, the stratigraphic context of the site is complicated by its shallow Holocene soils.

TABLE 25

SITE 7K-C-365A DIAGNOSTIC BIFACES

Period	Point	Dimensions (mm) L W T	Provenience	Material	Comments
Paleo-Indian	Kirk stemmed	58x25x9	F.13, 1.3'b.s.	rhy	length est. (tip gone)
Archaic	bifurcate	36x22x6	F. 13, 1.8'b.s.	jas	serrated edges (resharpened?)
	Neville-like	?x27x8	N0E15, Level 1	jas	transverse medial fracture
Woodland I	stemmed	27x17x6	F. 12	chert	with cortex heavily resharpened
	teardrop	?x15x6	S5E20, Level 2	jas	base missing
	teardrop	30x17x6	N0E5, Level 8	jas	cortex, heavy resharpening
	corner notched	36x25x8	S10E10, Level 2	qtz	assymetrical blade, ground base
	corner	38x24x8	S50E25, Level 3	jas	cortex on

TABLE 25 (cont.)

SITE 7K-C-365A DIAGNOSTIC BIFACES

Period	Point	Dimensions (mm) L W T	Provenience	Material	Comment
Woodland I (cont.)	contracting stem	57x27x12	S10E15, Level 3	purple arg	many steps and hinge fractures
	square base	39x18x8	N20E10, Level 2	red & gray qzte	
	square base	32x18x9	N5E0, Level 4	gray chert	basally ground, heavily resharpened, exhausted
	straight stem	34x18x7	S65E10, Level 3	gray qzte	possible impact fracture
	straight stem	36x19x10	N5E10, Level 3	red jas	assymetrical blade, heavily resharpened, cortex present
	contracting stem	40x19x6	S5E0, Level 6	brown jas	cortex present made on curved flake

PLATE 14

Site 7K-C-365A, Diagnostic Artifacts Recovered from Feature 13

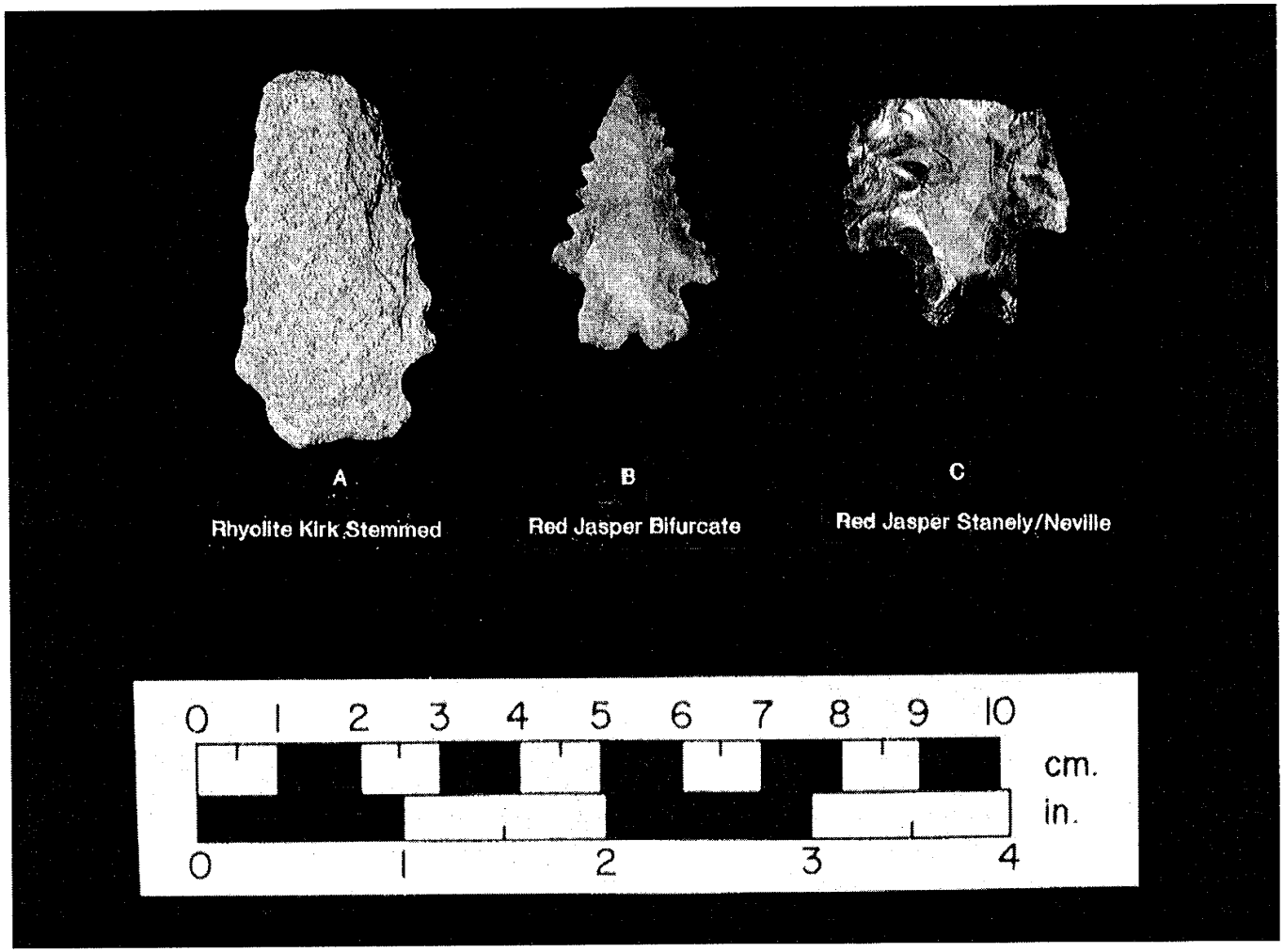


PLATE 15

Site 7K-C-365A, Diagnostic Projectile Points from the Woodland I Period

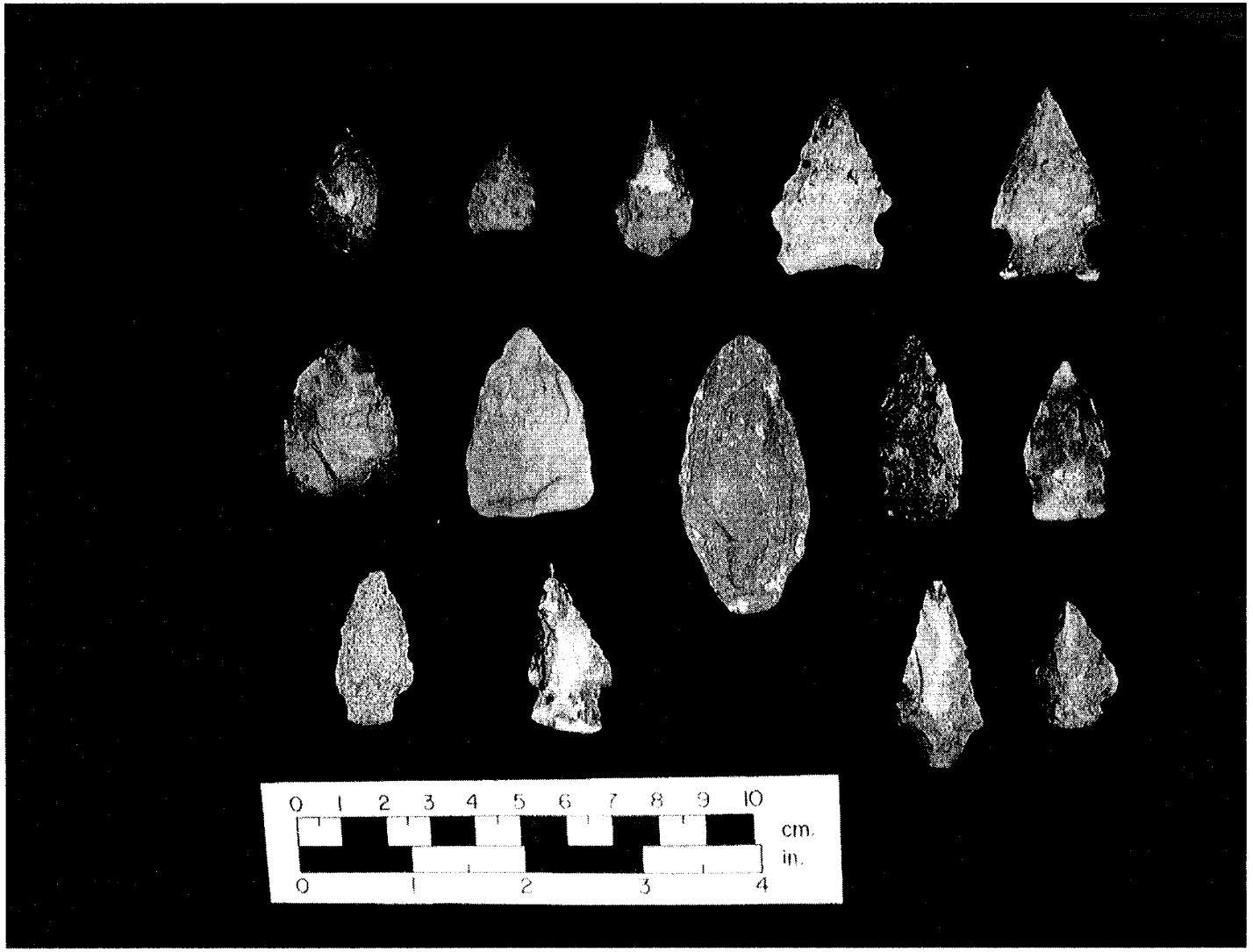
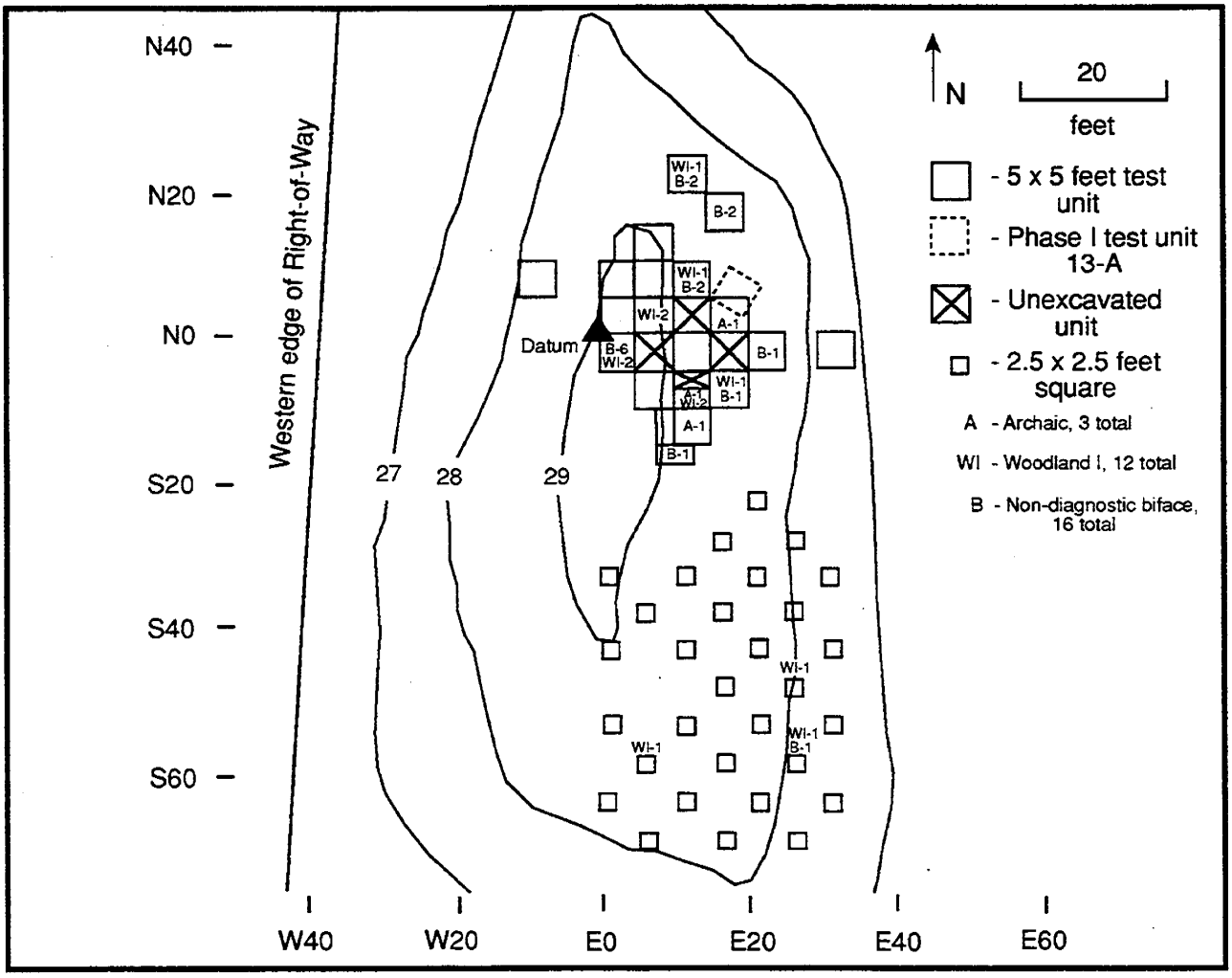


FIGURE 105

Dover Downs Site (7K-C-365A) - Distribution of Total Bifaces Recovered from the Site

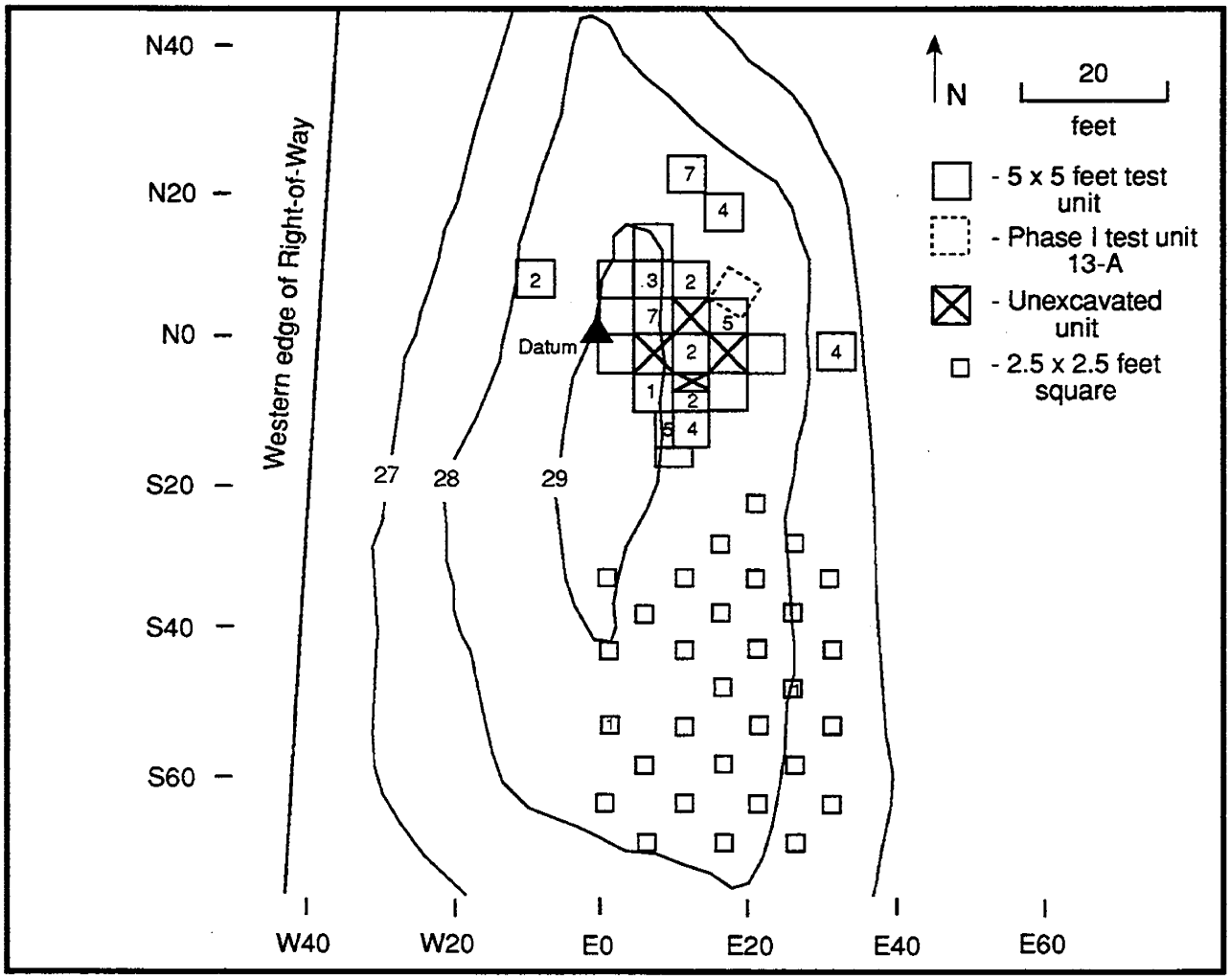


The other 12 diagnostic Woodland I points consist of a variety of stemmed and notched forms and their distribution is shown in Figure 105. They were fairly evenly distributed across the site and were adjacent to features as well as several feet from them. Two corner-notched, three teardrop, and nine straight or contracting stem points were found and most are quite small and show evidence of considerable use and resharpening. Table 25 gives the dimensions and provenience of these diagnostic bifaces. Most are less than 1.5" in length, possess steep edge angles, and are thought to be discards. These bifaces were found throughout Levels 1-8 (0-2.0' below surface).

Prehistoric ceramics were found in seven units during the Phase II excavations. Sixteen Minguannan sherds were found in Levels 5 through 11 of S45E0 and 14 Minguannan sherds were found in Levels 1 to 3 of S30E15. All are undecorated and quite small. One Wolfe Neck sherd was found in Level 1 of N5E0 and eight small unidentified sherds were recorded from Level 2. Wolfe Neck sherds were also found in Test Unit S10E10 (Level 2) and on the surface near S25E0. None of the sherds were found in features and the concentration of Woodland II sherds in S45E0 and S30E15 probably represent activity areas or perhaps the breakage of a single vessel at that location. The great depth of the sherds in S45E0 was caused by a tree being pulled from the site during the clearing work done by Dover Downs management.

FIGURE 106

Dover Downs Site (7K-C-365A) - Distribution of Total Fire-Cracked Rock Recovered from the Site



The fire-cracked rock distribution at the site is plotted in Figure 106. It seems to be concentrated in the northern half of the site, although the counts are low and no hearth features were recorded from any of the squares. Only 67 total pieces were recorded from the 550 square feet (several thousand cubic feet) excavated during the Phase II work, suggesting that fire or hearth-related activities were not common.

By far the most common tool class on the site is that of scraping and expedient cutting flakes (Table 26). Fifty-seven utilized flakes (unmodified unifacial tools), ten unifaces with prepared edges (flake tools), and seven bevel edge scrapers comprise 67 percent of the total tools recovered during the Phase II excavations. Again, these tools appear to have been evenly distributed across the site. Cryptocrystalline lithic materials were the preferred raw materials.

TABLE 26

SITE 7K-C-365A FLAKE TOOLS AND UTILIZED FLAKES

Provenience	Artifact	Description
S10E15, Lv. 3, SE	1 chal. util. fl.	12x15x3mm, 21mm of worked edges
S10E15, Lv. 4, NE	1 jas. fl. tool	cortex, 26x16x10mm, 39mm of worked edge
S15E5, Lv. 2, SE	1 jas. fl. tool	23x17x3mm, 1 worked notch, 8mm across
S15E10, Lv. 2, SW	1 chal. util. fl.	cortex present, struck off cobble core, 38x11x7mm, edge 17mm
S15E10, Lv. 4, SE	1 chal. util. fl.	15x18mm, no cortex, edge 11mm long
S35E20, Lv. 2, NW	1 jas. util. fl.	cortex present, 21x10x3mm 5mm concave edge
S35E30, Lv. 2, NW	1 chert util. fl.	19x14x3mm, 11mm worked edge
S40E15, Lv. 3, NW	1 chert util. fl.	44x11x6mm, 38mm worked long edge
S45E0, Lv. 5, NW	1 chert util. fl.	cortex present, 18x11mm, edge 9mm long
S45E20, Lv. 4, NW	1 jas. util. fl.	split cobble, with cortex 35x27mm, edge 15mm, concave edge
S45E20, Lv. 5, NW	1 irst. util. fl.	cortex present, 36x16mm, 2 edges, 10 and 30mm used
S50E15, Lv. 2, NW	1 jas. scraper	reworked CN biface, 22x23x7mm
S65E0, Lv. 1, NW	1 jas. util. fl.	9x10x2mm, edge 7mm long
N20E10, Lv. 3, NE	1 jas. util. fl.	17x13x4mm, cortex present edge 10mm
N20E10, Lv. 1, SW	1 jas. util. fl.	cortex present, 24x16x6mm flaked edge 17mm
N15E15, Lv. 1, NE	1 jas. util. fl.	cortex present, 20x11x4mm worked edge 14mm long
N15E15, Lv. 2, NW	1 jas. util. fl.	cortex present, 41x21x10mm, unifacially worked around 3 of 4 sides
N10E5, Lv. 1, SE	1 jas. util. fl.	19x12x2mm, no cortex, small thinning flake, 11mm worked edge
N10E5, Lv. 1, SE	1 jas. util. fl.	cortex present, 19x11x3mm 15mm worked edge
N10E5, Lv. 1, SE	1 chert fl. tool	pebble flake, 23x20x5mm, 1 prepared edge 20mm long
N10E5, Lv. 3, SE	1 qzte. util. fl.	cortex present, 36x31x11mm, 38mm worked edges
N10E5, Lv. 4, NE	1 qzte. fl. tool	33x19x7mm
N10E5, Lv. 4, SE	1 jas. util. fl.	42x14x7mm, long flake off pebble, 20mm used edge
N5E0, Lv. 1, SW	1 jas. util. fl.	thinning flake off edge of biface, distal edge used, 21x13x5mm, worked edge 14mm
N5E5, Lv. 2, NW	1 chert util. fl.	18x13x5mm, cortex present 6mm worked edge
N5E5, Lv. 2, NE	1 jas. util. fl.	23x15x4mm, dark reddish brown, 7mm worked edge
N5E5, Lv. 3, NE	1 jas. util. fl	pebble flake, cortex on 2 ends, punch and side scraper 28x14x5mm
N5E5, Lv. 4, NE	1 jas. scraper	small flake with cortex 16x13x3mm thumbnail scraper

TABLE 26 (cont.)

SITE 7K-C-365A FLAKE TOOLS AND UTILIZED FLAKES

Provenience	Artifact	Description
N5E5, Lv. 4, NW	1 jas. util. fl.	cortex present, 27x8x7mm 6mm worked edge
N5E5, Lv. 5, SE	1 jas. util. fl.	punch-like, 25x18x3mm, 29mm total worked edges
N5E10, Lv. 2, NW	1 qzte. util. fl.	21x10x2mm, excurvate worked edge 28mm long, cortex present
N5E10, Lv. 3, SW	1 jas. util. fl.	25x16x5mm, cortex present 12mm worked edge
N5E10, Lv. 3, SE	1 chert fl. tool	bifacially worked, broken cortex present, 20x12x4mm
N5E10, Lv. 4, SW	1 jas. util. fl.	25x21x4mm, 27mm total worked edges, cortex present
N5E10, scraping lvs. 1-5	1 jas. fl. tool	26x30x5mm, 20mm worked edge, cortex present
N5W10, Lv. 3, NE	1 jas. util. fl.	31x15x5mm, red, and used only 5mm wide, worked edges
N5W10, Lv. 3, NE	1 jas. util. fl.	30x25x10mm, brown, with cortex, 25mm total worked edges
N5W10, Lv. 4, SW	1 chert util. fl.	cortex present, 23x16x8mm
N5W10, Lv. 5, SW	1 jas. util. fl.	notched, 21x20x3mm, small notch worked edge 5mm wide
N0E0, Lv. 1, SE	1 chal. util. fl.	made from split pebble, worked edge, 26x22x10mm, edge length 37mm
N0E15, Lv. 1, NW	1 qtz. util. fl.	20x15x4mm, no cortex, 13mm wide notch
N0E15, Lv. 2, SE	1 jas. util. fl.	22x21x10mm, cortex present, 25mm total worked edges
N0E15, Lv. 3, NE	1 jas. util. fl.	cortex present, 19x16x2mm, 10mm worked edge, potlidded
N0E15, Lv. 6, SE	1 chert util. fl.	2 worked edges, 1 excurvate, 1 straight, total worked edges 12mm, 17x14x3mm
N0E5, Lv. 3, SE	1 chert fl. tool	cortex present, bifacially worked, 30x19x8mm, edge 19mm
N0E5, Lv. 4, SW	1 qtz. scraper	18x18x15mm steep edge
N0E5, Lv. 4, NE	1 jas. fl. tool	cortex present, 18x15x3mm, edge 38mm total
N0E5, Lv. 5, NE	1 jas. util. fl.	21x14x5mm, 2 worked edges totalling 25mm
N0E5, Lv. 6, SW	1 qtz. util. fl.	broken off edge, 18x10x5mm, 13mm worked edge remains
N0E5, Lv. 8, NE	1 chert fl. tool	23x16x3mm, 9mm utilized edge
S5E0, Lv. 1, SW	1 chert fl. tool	31x21x5mm, cortex present 10mm worked edge
S5E0, Lv. 1, NE	1 chal. scraper	26x18x7mm, 13mm worked edge
S5E0, Lv. 2, NW	1 jas. scraper	cortex present, 20x16x5mm several small edges worked
S5E0, Lv. 4, SW	1 chert util. fl.	28x25x6mm - one 20mm worked edge
S5E0, Lv. 4, SE	1 jas. util. fl.	cortex present, 26x23x5mm 19mm straight worked edge

TABLE 26 (cont.)

SITE 7K-C-365A FLAKE TOOLS AND UTILIZED FLAKES

Provenience	Artifact	Description
S5E10, Lv. 1, NE	1 chert util. fl.	29x18x4mm, cortex present utilized edge totals 35mm
S5E10, Lv. 5, SW	1 jas. scraper	steep bevel edge, 25x25x11mm, end and side scraper, total worked edge - 38mm, no cortex
S5E30, Lv. 1, SE	1 qtz. util fl.	cortex present, 31x27x16mm, 50 total mm worked edges
F. 12, 2.0-4.0' bs	1 jas. scraper	end scraper with cortex, 25x18x7mm - prepared edge
F. 12, South 1/2 2.0-4.3' bs	1 jas. util. fl.	burin-like, 21x16x3mm, 7mm edge
F. 13, SW 1/2 1.75-2.25' bs present, thick	1 jas. util. fl.	25x20x12mm, cortex
F. 13, SW 1/2 2.25-2.75' bs edge 23mm long	1 jas. util. fl.	27x10x4mm, cortex present

Key:

Lv. - Level	irst. - ironstone	util. - utilized
chal. - chalcedony	qzte. - quartzite	fl. - flake
jas. - jasper	qtz. - quartz	CN - corner notched
		bs - below surface

Plant processing tools are generally absent from the site assemblage; however, a large double-sided quartzite mortar was found in Level 5 of Test Unit S10E5 (Plate 16). This artifact measures approximately 7.0" x 6.3" x 2.2". The grinding areas average 0.25" in depth but have very different breadth measurements and other characteristics. The obverse side measures about 4.4" across and possesses arcuate grinding marks as if a roughly circular grinding motion was used. The reverse side is only 2.5" across and possesses only direct pecking marks. It appears as if each side was subjected to a different type of grinding or pecking motion, which could signify different kinds of activities. It is not possible to determine if the different wear exhibited by each side is caused by concurrent use, or is a function of sequential use in the life of the mortar.

Feature Excavations

Seventeen soil pit features were identified during the Phase II excavations (Figure 103). Three of these features (Features 12, 13, and 15) were tested to determine possible function, associated artifacts, and cultural components. The remainder were mapped but left unexcavated. The presence of a feature was generally defined by darker organic brown fill in a lighter colored silty matrix or by a pasty yellow-brown silt in the coarse orange sands. The latter criterion was used to define Features 12, 13, and 15, which were thought to be older features that had most of their organic material removed through leaching.

Feature 12 was not defined until seven levels (1.25') of soil had been removed from Test Unit N0E5 (Figure 107). The final configuration of the feature walls indicated that possibly all of the artifacts from these levels could be assigned to the feature. Ninety flakes of various materials, one core, eight fire-cracked rocks, a stemmed chert point (Figure 108-A; Plate 15-A), a quartz scraper (Figure 108-B), and five utilized flakes and flake tools (Figure 108-C), were recovered from all levels within and above the feature. The biface has been heavily resharpened and the lobate stemmed portion comprises perhaps 60 percent of the remaining mass. A hint of a

PLATE 16

Site 7K-C-365A, Quartzite Mortar Recovered from Test Unit S10E5

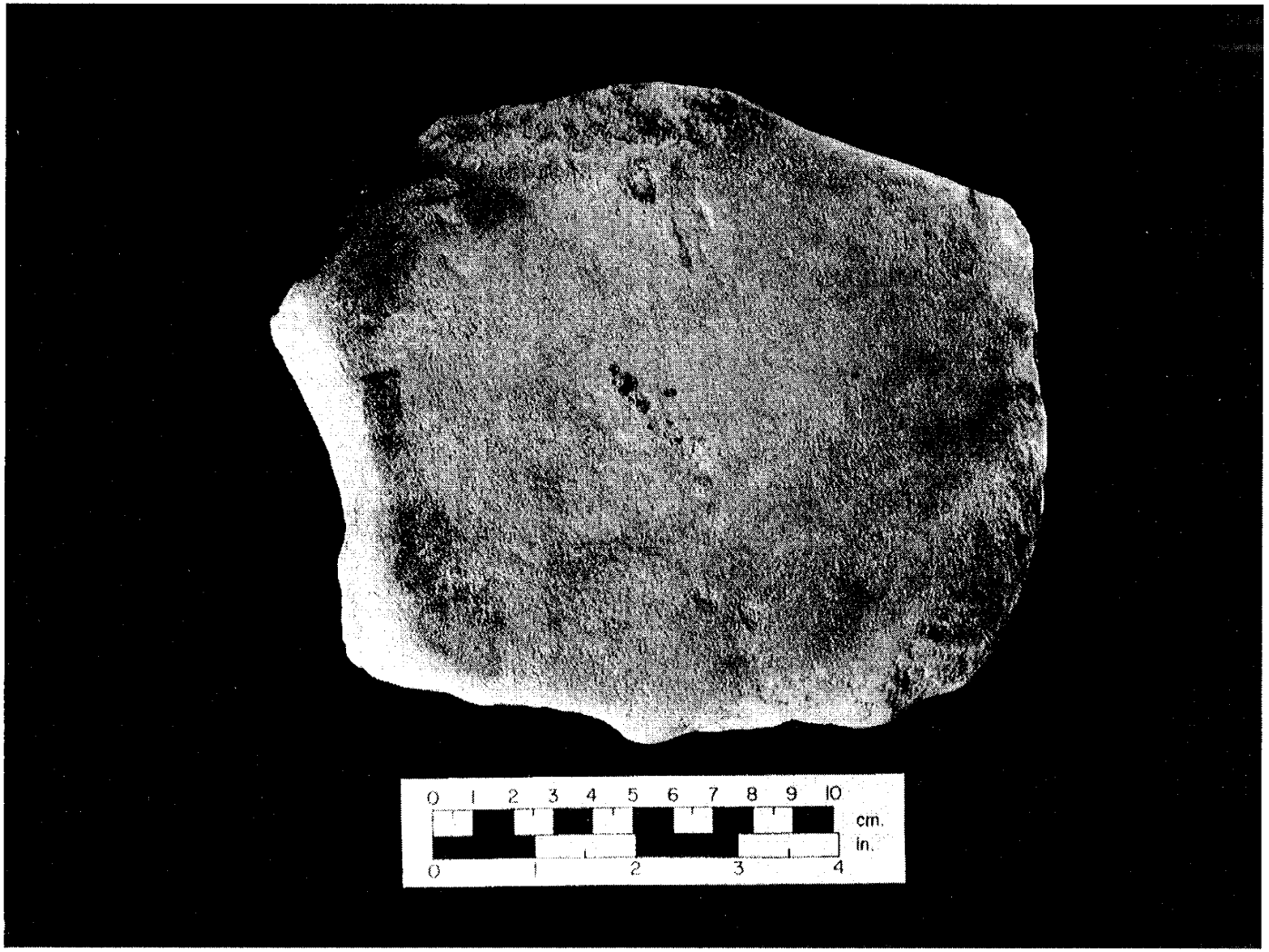


FIGURE 107

Dover Downs Site (7K-C-365A) - North/South Profile of Feature 12 after Excavation

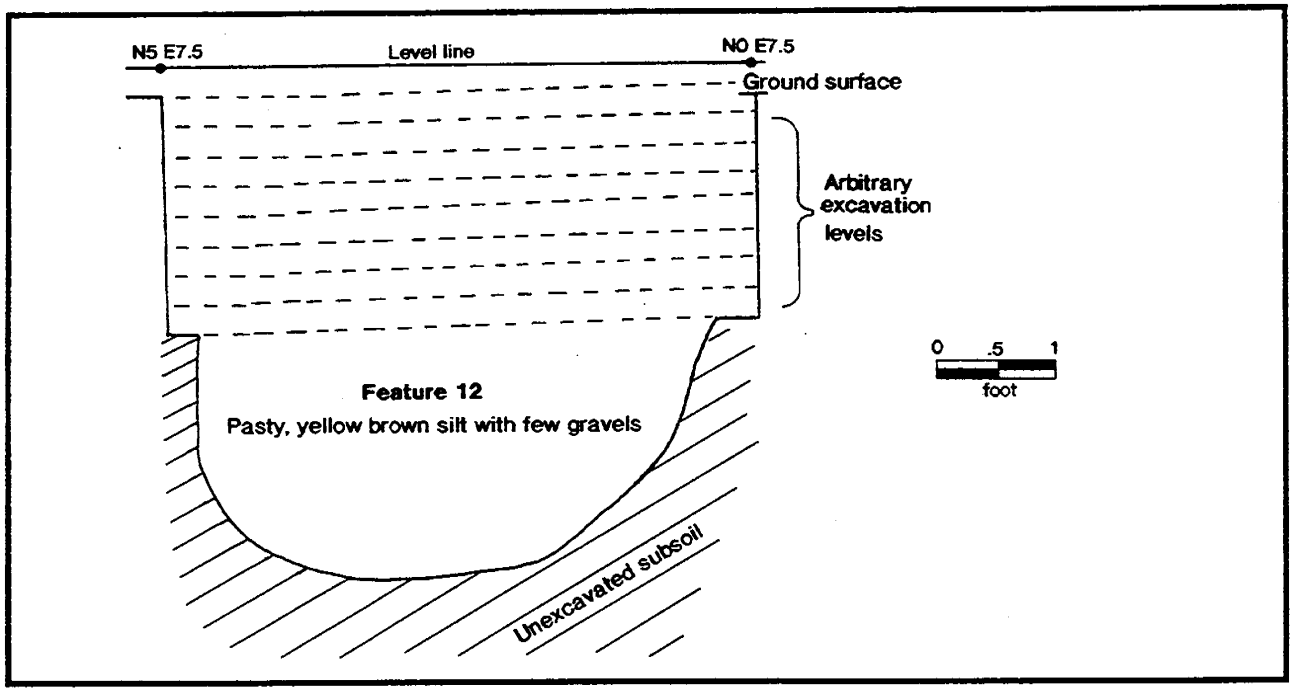


FIGURE 108

Dover Downs Site (7K-C-365A) - Sample of Tools Recovered from Feature 12

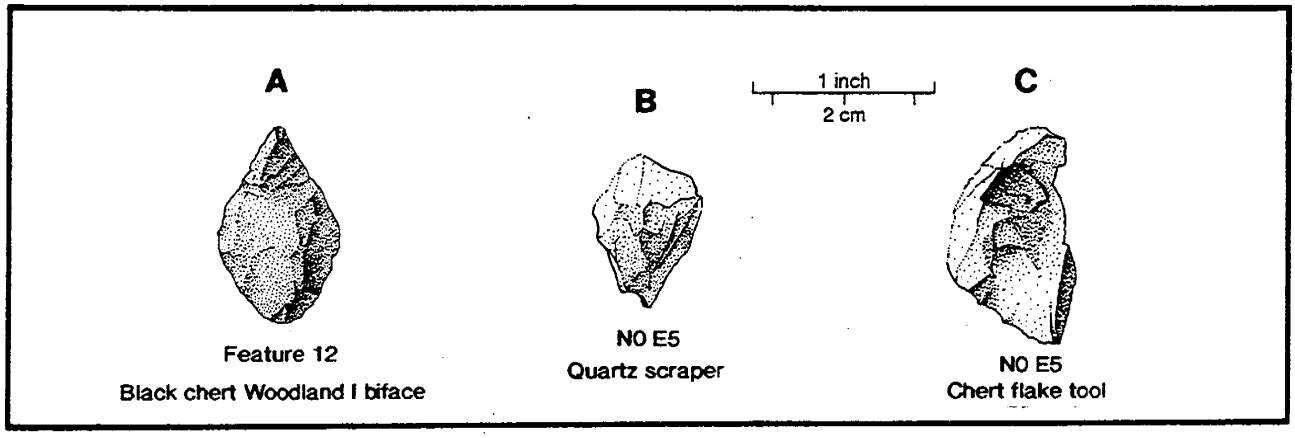


PLATE 17

Site 7K-C-365A, Feature 12 Excavated

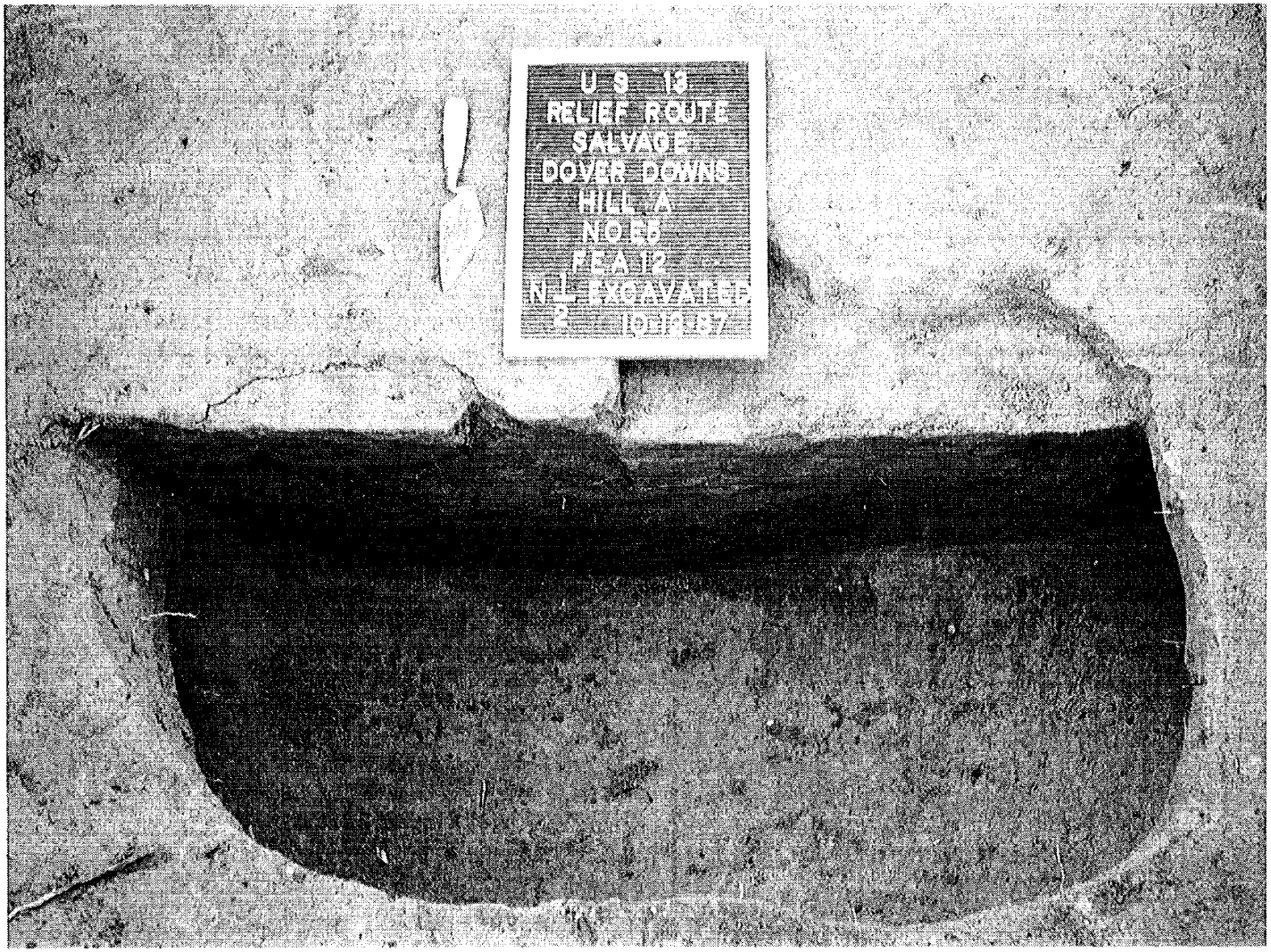


FIGURE 109

Dover Downs Site (7K-C-365A) - Feature 13 South Wall Profile

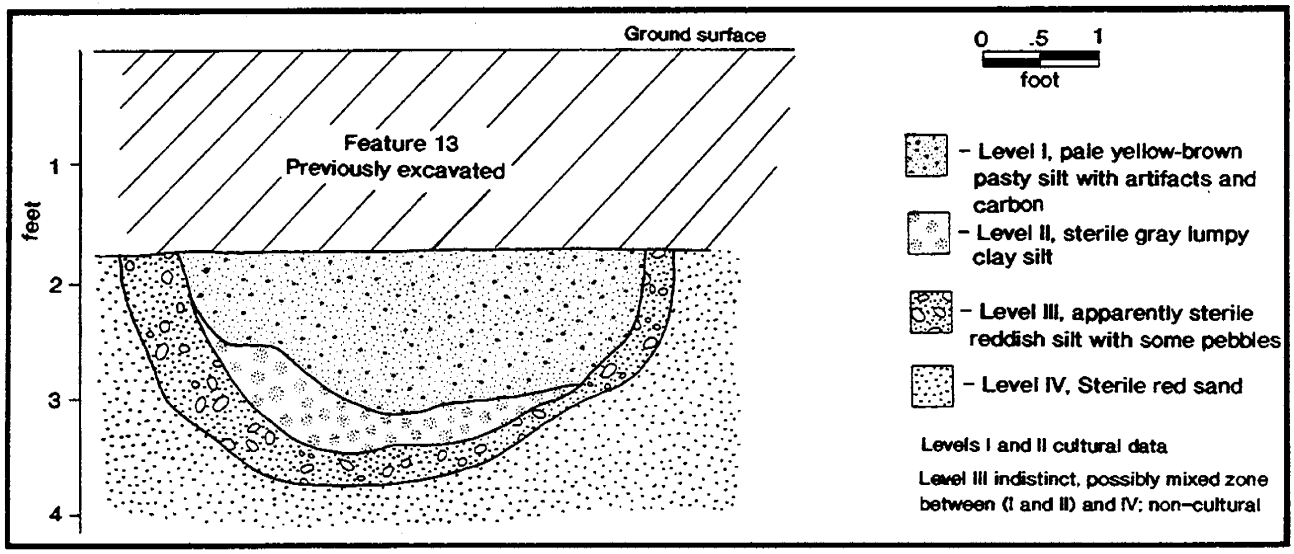


TABLE 27

SITE 7K-C-365A RADIOCARBON DATES

Lab. No.	Provenience	Dates B.P./B.C.	Calibrated Date
AA-3833	F13, SW 1/2	7625 +/- 65 B.P.	B.C. 6554 (6449)
AA-3834	F13, SW 1/2	6055 +/- 65 B.P. 4170-4040 B.C.	B.C. 5193 (4990, 4988, 4945) 4901
AA-3835	F12	7400 +/- 65 B.P. 5515-5385 B.C.	B.C. 6381 (6217, 6202, 6183) 6127

Reference:

Stuiver and Becker (1986:863-910)

shoulder is evident on each lateral edge where the resharpening flake scars end and the point is apparently a discard. The roughly circular feature had vertical side walls, a curved bottom, and ended at 4.1' below surface (Plate 17). It's function is unknown. A TAMS radiocarbon date of 7400 plus or minus 65 years B.P. (5383 - 5515 B.C.) (AA-3835) was obtained from a small charcoal sample from levels adjacent to the stemmed point. Recalibration of this date produced a date of 6381 (6217, 6202, 6183) 6127 B.C. (Stuiver and Becker 1986) (Table 27).

Feature 13 was a large kidney shaped feature lying in units S15E5, S15E10, and S10E10. It was first encountered in Level 7 of S15E10 but it likely extended much higher in the profile (Figure 109; Plate 18). A lack of clear feature definition hindered soil interpretation in this area of the site. When fully excavated, the feature measured 8.7' x 4.6' and extended to 3.2' below surface. A red jasper bifurcated base point was found at 1.8' below surface within the defined limits of the feature fill (Figure 110-A; Plate 14-B). This point shows evidence of extensive resharpening, although the serrated edges had been maintained throughout its use. The flake pattern evident on both sides of the point indicates that the resharpening flakes had penetrated in from the edges of each face and stopped at a certain location on each face. These measurements suggest that the haft extended up the base to the spot where the resharpening flakes terminated. For this 1.4" long biface, these measurements were 1.2" and 1.25" for each face. A rhyolite Kirk stemmed point was found in the northern half of the feature at 1.7' below surface (Figure 110-B; Plate 14-A). Other artifacts found in the feature include two utilized flakes, two cores, and 39 flakes (seven of which were rhyolite). The excavated levels in the units above the feature yielded a corner-notched quartz point and debitage, but it could not be assumed that these artifacts came from the feature. Two small charcoal samples from the vicinity of the red jasper bifurcated base point were submitted for radiocarbon dating and yielded dates of 7625 plus or minus 65 years B.P. (5740-5610 B.C.) (AA-3833) and 6055 plus or minus 65 years B.P. (4170 - 4040 B.C.) (AA-3834). Recalibration of these dates produced dates of 6554 (6449) 6421 B.C. and 5193 (4990, 4988, 4945) 4901 B.C. respectively (Stuiver and Becker 1986).

Feature 15 lay just to the north of Feature 12 and was intruded upon by Feature 12. Like the previous features, it was defined by a pasty, slightly silty, yellow-brown soil in a red-brown gravelly subsoil which was especially clear below 2.0' below surface. The bottom of the feature was found at 3.8' below surface (Figure 111). No diagnostic artifacts were recovered from the feature and just 20 flakes and three fire-cracked rocks comprise the total artifacts recovered.

Blood Residue Analysis

Lithic artifacts from the Dover Downs site were subjected to blood residue analysis using the chemstrip testing method as described by Custer, Ilgenfritz, and Doms (1988) and the results are summarized in Table 28. The analysis is used to determine the presence of hemoglobin on the tools and the test measures presence or absence of blood but not species. The goal is to use this technique to aid in determining if animal butchering was conducted at the site. Soil, pebble, and gravel samples were tested to control for the possibility of contamination at the site. All of the 120 tests on 102 control samples were negative, indicating that contamination was not a problem at the site. Ninety-one tools from the site (bifaces, utilized flakes, flake tools, bevel-edge scrapers) and 104 pieces of debitage showing no apparent edge wear were tested. The test was frequently applied to several loci on each tool and thus a total of 344 individual tests were conducted on the 195 artifacts. All of the 104 pieces of debitage tested negative, as did 88 of the 91 tools. Positive results were obtained on a quartz utilized flake from S45E20, a jasper utilized flake from S5E10, and a heavily resharpened chalcedony stemmed point from N5E0. It is apparent then that at least some butchering was being conducted at the site and the positive readings obtained from the three tools are not "false positives" resulting from soil contamination.

Flotation Analysis

Two liter flotation samples were taken from all excavated features and 5'x 5' test units. Each sample was divided into a heavy and light fraction and the overall findings for each fraction will be summarized below. The smallest screen size used at the site for excavation was 1/4-inch hardware cloth which meant that flakes smaller than that would be lost. Tool edge resharpening would be necessary for the proper butchering and processing activities which apparently took place on the site, and it was thought that numerous small flakes would be generated by this activity. Therefore, it was expected that substantial quantities of small (less than 0.6 cm) resharpening flakes, the result of tool edge maintenance, would be recovered from the heavy fractions. However, the number of recovered flakes averaged just three to four per sample, or 10-20 per square or feature for all levels combined, suggesting that little edge maintenance of bifacial and unifacially retouched tools occurred at the site and that the reliance upon expedient tools (utilized flakes) was very high.

PLATE 18

Site 7K-C-365A, Feature 13 Profile

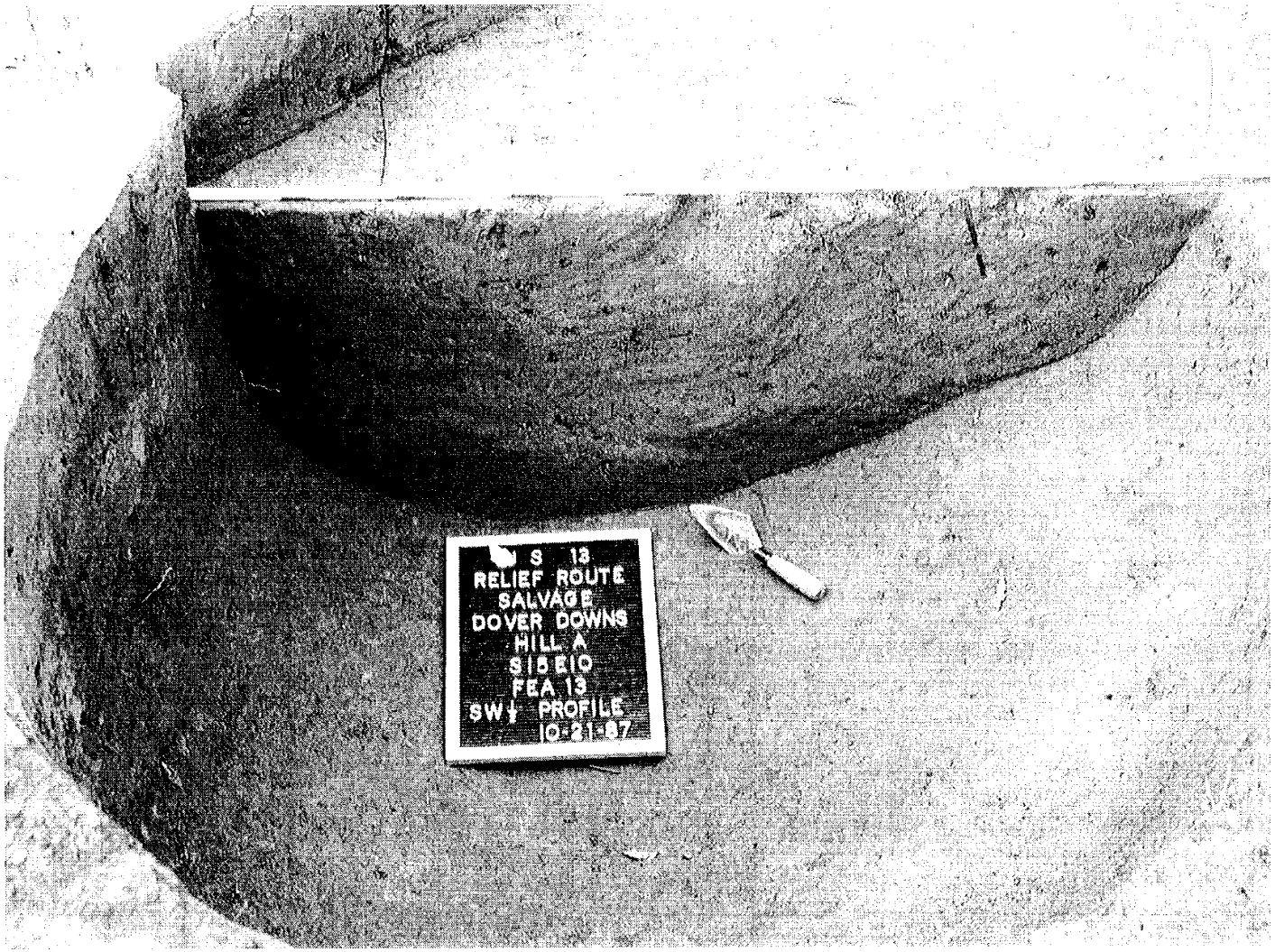


FIGURE 110

Dover Downs Site (7K-C-365A) - Diagnostic Projectile Points Recovered from Feature 13

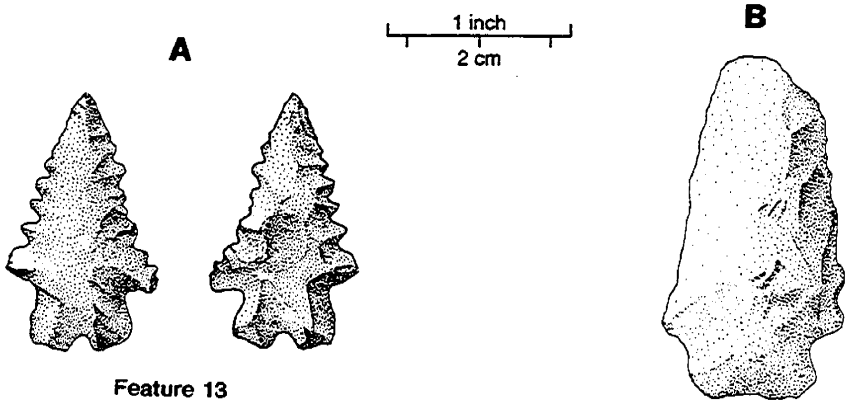


TABLE 28

SITE 7K-C-365A SUMMARY OF BLOOD RESIDUE ANALYSIS

Sample Type	Number of Samples Conducted	Number of Tests Showing on all	Number of Samples Showing +Reaction	Number of Samples Showing -Reaction
Control (soils, pebbles, gravels)	102	120	0	102
Debitage	104	131	0	104
Tools	91	213	3	88

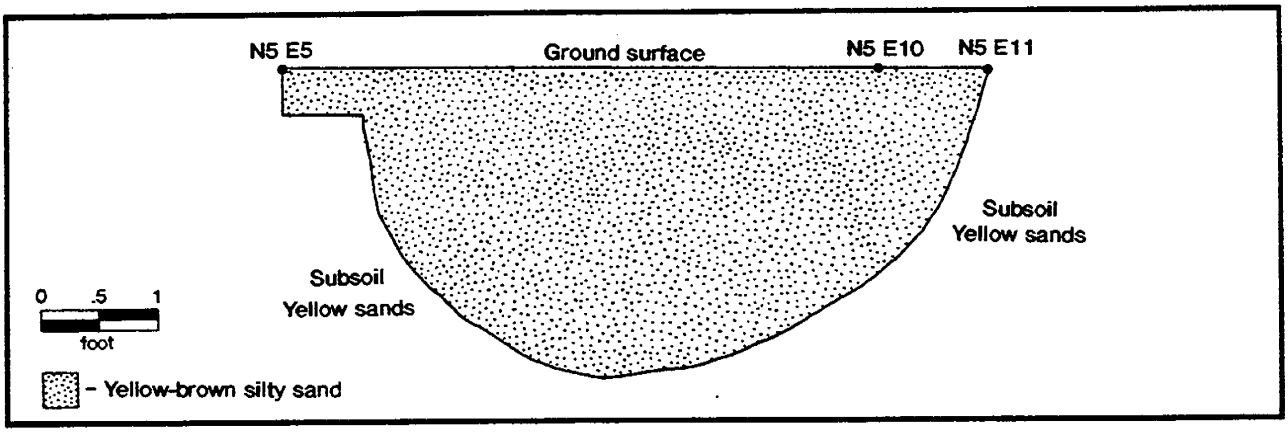
A preliminary examination of the light fractions indicated that preservation is good and wood charcoal was present in all samples. Charred nut hulls, including hickory and walnut, were frequently identified. About six different types of charred seeds, including Chenopodium were observed. Amaranth seeds were entirely absent.

Conclusions and Recommendations

The Phase II excavations at the Dover Downs site indicated that all four major periods in Delaware prehistory are represented by a combination of point types, radiocarbon dates, and/or ceramics. The artifacts and features excavated at 7K-C-365A offer some insights into site chronology and function as well as research potential and the understanding of prehistoric lifeways in Kent County and the region. However, since only about 13 percent of the site was excavated, the summary analysis provided below must be considered preliminary in nature and the following statements should be considered hypothetical until more data are available.

FIGURE 111

Dover Downs Site (7K-C-365A) - Feature 15 North Wall Profile



The actual number of diagnostic points and ceramics recovered from the site is small (17 points, 33 identifiable sherds), but the variety does indicate a lengthy, if discontinuous, occupation spanning nearly 9,000 years. The Paleo-Indian rhyolite Kirk point is the earliest tool found at the site and has been dated to ca. 6,800 B.C. in West Virginia, (Broyles 1971:65) and 7270 B.C. for the Rose Island site in Tennessee (Chapman 1975). Outside of a few dated points, little is known about the overall adaptation of the period. A mobile lifestyle of hunting and gathering with no permanent habitation sites and no long-term storage of food is suggested by Custer (1989:97). Kirk points have been found on the Delmarva Peninsula on the surface of plowed fields, but the example from the Dover Downs site is one of the first from an excavated context. If an associated Kirk occupation can be isolated at the Dover Downs site, then it may be possible to gain significant data about the lifeways of the prehistoric inhabitants from ca. 8000 years ago.

The presence of two Archaic Period points from the Dover Downs site indicates that it has the potential to provide information on the Archaic Period. During this period, the overall adaptation is so poorly understood that little comparative data exists. The bifurcated base point is the principle diagnostic point of the period, but it is known almost exclusively from surface finds in Delaware. The Neville-like biface from Test Unit N0E15 is intriguing but the evidence for the type in Delaware is scant at best. The limited number of tools and chipping debris associated with Archaic bifaces, plus the lack of hearths from the site, indicates 7K-C-365A may have functioned as a procurement site during this time. Nonetheless, further study of more artifacts from this occupation of the site will provide significant information.

Most of the diagnostic bifaces from the site are stemmed and notched forms from the Woodland I Period which have been dated to the period from 3,000 B.C. to A.D. 1,000. A variety of cultural complexes and adaptations have been identified and it is by far the most complex period in Delaware prehistory (Custer 1989:141). Most of the Woodland I bifaces have asymmetrical blade shapes, show extensive resharpening, and are probably discarded tools. The predominantly small (less than 0.75") flakes from the site indicate that primary biface reduction was not practiced. The small number of Woodland I ceramics and the lack of hearths suggests that the Dover Downs site was a procurement site. Based upon the variety of tools, including the flake tools and utilized flakes from the site, and the site setting adjacent to freshwater wetlands, the site appears similar to the Hawthorn site (7NC-E-46) of northern New Castle County (Custer and Bachman 1984), which has been termed a "procurement/processing" station. However, more information is necessary from 7K-C-365A before a conclusion about its function can be drawn.

No Woodland II points were found at the site; however, 28 sherds of Minguannan ceramics and one sherd of Killens Ware were recovered, suggesting that the site may have served as a base camp during Woodland II times. Nearly all of the known Minguannan Period sites are macro-band base camps from the Fall Line Zone and

Piedmont of northern Delaware and southeast Pennsylvania (Custer 1989:311). Thus, the Dover Downs site contains some potential for clarifying the range of the Minguannan Complex and how this site functioned within the culture.

As was mentioned previously, the predominant tool types from the site are the utilized flakes (expedient tool, unretouched edge) and the flake tools or scrapers (various forms with retouched edges). Although these tools are not culturally specific and can be found during any time period, they suggest that the butchering and processing of animals has been a major activity at the site. These kinds of activities are associated with procurement/processing sites and suggest that for much of the site's history, these types of activities were common.

Although only a small portion of the site was excavated, 17 features were identified and three were fully excavated. However, the excavated features produced few artifacts and their functions are unknown. Some of the features contained charred plant food remains and a grinding stone for processing plant foods was found at the site. Thus, plant food processing did take place at the site in addition to the butchering and animal processing activities noted above. The remaining features at the site will have to be excavated before the temporal and functional history of the site can be understood.

It is interesting to note that the hilltop setting of the Dover Downs site has apparently been an attractive locale for several thousand years, or well back into the early Holocene. During the past 5,000 years, the Delaware environment has been characterized by fluctuating periods of alternately wet and dry conditions with wet and dry intervals ranging in length from 500 to 1,000 years (Brush 1989:1). It may be possible that the occupations at the Dover Downs site could be correlated to the varied climatic intervals noted above and it may be possible to determine whether prehistoric human adaptations fluctuated with the climatic changes or experienced little change. The lengthy duration of occupation at the Dover Downs site provides the potential for the comparison of cultural data with the available paleoenvironmental data.

The soil stratigraphy of the Dover Downs site also provides interesting data on regional paleoenvironments. The shallow Holocene soils at the site and the presence of diagnostic artifacts that are ca. 9000 years old in relatively shallow contexts indicate that soil deposition rates at the site have been quite low through the entire Holocene. In contrast, many other site locations in Delaware (e.g. - Ward and Bachman 1987; Custer and Watson 1985) show variable soil deposition rates through the Holocene, with aeolian soil deposition rates much higher than those predominant at Dover Downs between ca. 3000 B.C. and 1000 B.C. Because higher aeolian soil deposition rates are believed to be related to dry climates and loss of vegetation, the low rates seen at Dover Downs may indicate a greater stability of vegetation at this site compared to other locations in Delaware. Palynological studies of the freshwater wetlands surrounding the site, in conjunction with further studies of the site's stratigraphy, will help to better illuminate the regional variability in Delaware paleoenvironments and their changes through time. Furthermore, analysis of the preserved plant remains from features can also yield information on local paleoenvironments.

In sum, the Dover Downs (7K-C-365A) site has yielded much valuable information on Delaware prehistory and has the potential to yield much more. The site has never been plowed and although the archaeological deposits are shallow and complex, they have yielded artifacts from good stratigraphic context. The occupation of the site spans at least 9000 years of prehistory and includes the poorly known Paleo-Indian and Archaic periods. The Dover Downs site is especially unique in that the Paleo-Indian and Archaic artifacts are in good stratigraphic context. Furthermore, the site was occupied during later Woodland I and Woodland II time periods. Most data on Woodland I and Woodland II occupations available for central Delaware come from riverine site locations. The interior location of the Dover Downs site is a direct contrast to the riverine locations and will provide important comparative data on prehistoric adaptations during the later portions of Delaware's prehistory. The site also has preserved plant remains in prehistoric features which can yield significant information on prehistoric plant food use from a variety of time periods. Finally, blood residue analysis is possible at the site because the soils are free from contamination and present analyses show that the residues are present on some stone tools. In conclusion, the Dover Downs site contains materials for a wide variety of analyses that can generate important data on poorly known segments of Delaware's prehistory.

Based on the fact that the Dover Downs (7K-C-365A) site has the potential to provide significant information on Delaware's prehistory, it is eligible for listing on the National Register of Historic Places. A completed Determination-of-Eligibility is included in Appendix IV.

Phase II Results (7K-C-365B)

7K-C-365B, the Lookerman's Range site, lies about 200 feet southwest of 7K-C-365A and contains an early eighteenth century domestic historic archaeological site and a large prehistoric chipping feature of an undetermined age. Detailed discussion of the historic occupation of the site is provided in Grettler et al. 1991a.

The prehistoric component, which was minimally disturbed by the eighteenth century occupation, includes about 8000 artifacts, over 99 percent of which are unmodified waste flakes and cobble cores of a distinctive red-and-gray or red-and-buff quartzite. The lithic material surrounded a small, intact hearth but no other prehistoric soil pit features were associated. The site is clearly a quartzite cobble reduction locale, but indications are that little else took place at the site (Grettler et al. 1991b). The source of the cobble quartzite is unknown, but it is probably nearby. Since it is highly unlikely that poorly sorted coastal plain gravel deposits would contain solely one material type, the quartzite was selected from a variety of lithic types and brought to the site for reduction. The tools were then removed for use elsewhere. It is possible that the occupants of the site preferred the quartzite for all their chipped stone tool needs. However, this is highly unlikely as no example of that type of behavior has been recorded. It is also possible that the quartzite was being used for the manufacture of a functionally specific tool or an intermediate size biface (Grettler et al. 1991b). No late stage biface rejects or discards of any kind were found at the site so it does not appear as if depleted tool kits were being replenished with fresh tools. The few diagnostic artifacts found at the site were mostly Woodland I stemmed points of quartz, quartzite and cryptocrystalline materials (Figure 112). It appears as if a small band of people spent a day or two reducing quartzite cobbles of a specific material and then used those tools at other locations (Grettler et al. 1991b).

Quartzite tools have durable edges which are generally not as sharp as cryptocrystalline tools. They make good tools for chopping, gouging, and gross cutting of wood, bone, or animal tissue. It is possible that the prehistoric inhabitants of this site were manufacturing tools for this purpose. Apparently, this quartzite was preferred over other quartzites or non-quartzites. On most sites quartzite is a minority lithic source. The particular type of quartzite is rarely seen in this area, so this variety of material may have been preferred for the manufacture of a certain tool type for a specific function (Grettler et al. 1991b).

Conclusions and Recommendations

7K-C-365B measured about 20' x 20' and was completely excavated during the 1987 excavations (Bachman, Grettler and Custer 1988). Therefore, the site's limits are known. The prehistoric component of this site was found to be disturbed by the historic occupation and, therefore, the site's integrity has been compromised. This prehistoric component of the Loockerman's Range site (7K-C-365B) is, therefore, not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

7K-C-367

7K-C-367 is located within the proposed right-of-way northeast of Route 13 and Little River and south of Persimmon Tree Lane in Dover (Figure 2). The site is situated in a fallow agricultural field on a three-foot rise on the east side of an ephemeral tributary of the Little River. The area of the site consists of poorly-drained loamy soils of the Fallsington series (Matthews and Ireland 1971). The entire site has been plowed. Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing. The limits of the site and the location of all Phase II test units appear in Figure 113.

Phase I Summary

Phase I testing consisted of two series of shovel test pits, one along the center line of the proposed right-of-way, and another along an adjacent terrace. Shovel Test Pit 10-11, which comprises this site, produced

FIGURE 112

Lookerman's Range Site (7K-C-365B) - Diagnostic Artifacts

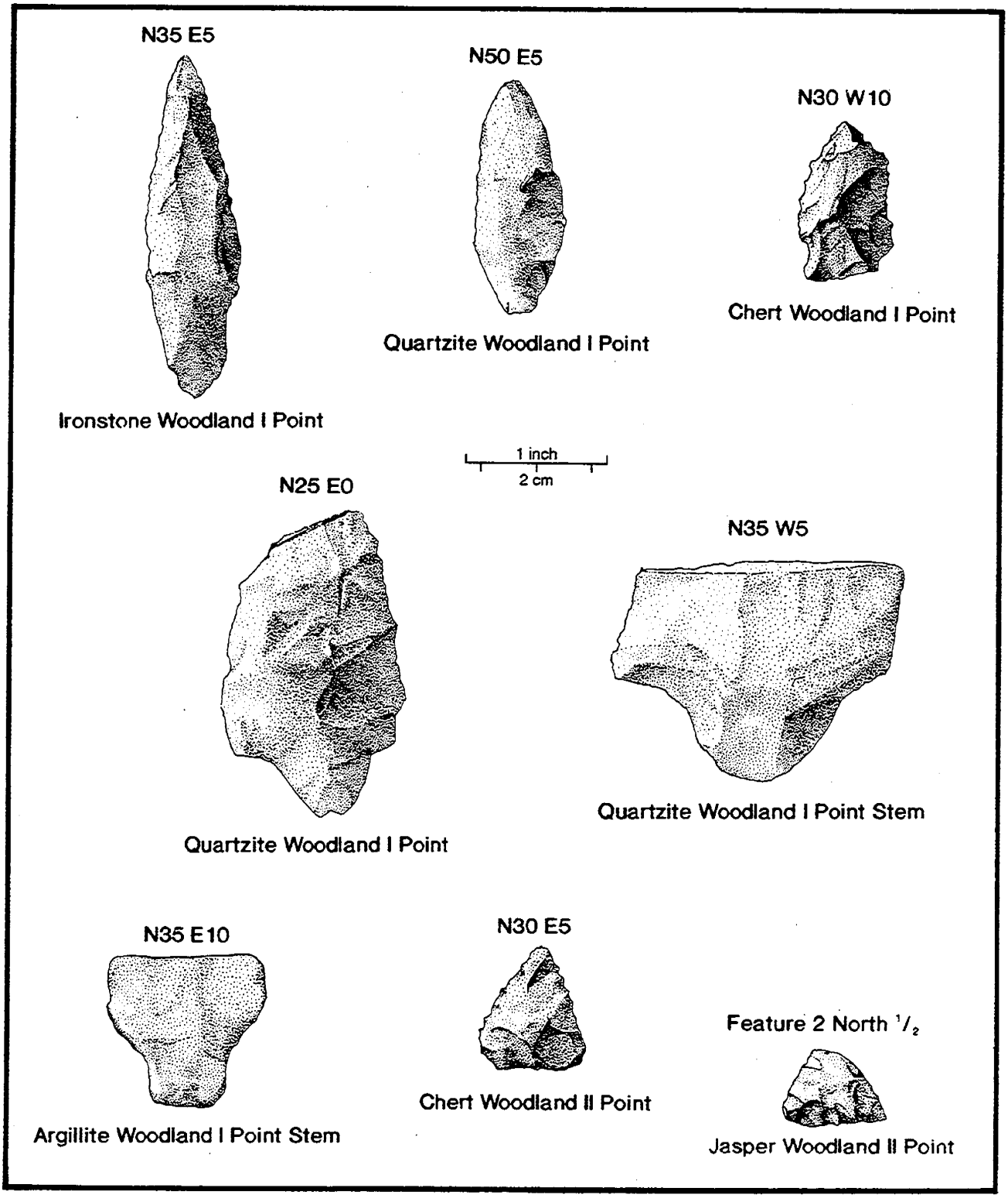


FIGURE 113

Site Limits and Location of all Phase II Tests Showing Concentrations of Prehistoric Artifacts from the Plow Zone